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**Physical, Nutrient, and Biological Measurements of
Coastal Waters off Central California in October 2005**

by

Thomas A. Rago, Reiko Michisaki, Baldo Marinovic, and Katherine Whitaker

May 2006

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University of California, Santa Cruz

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| 13. ABSTRACT (maximum 200 words) The results of analyses of hydrographic, nutrient, and biological data collected in coastal ocean waters off Central California in October 2005 aboard the <i>R/V Point Sur</i> are presented in both tabular and graphical form. The cruise proceeded from Moss Landing, California, to Point Reyes, California, following CalCOFI line 67 to station 90, thence to CalCOFI line 60/station 90, and finally along CalCOFI line 60. Marine mammal observations taken during the cruise are also included. | | | | |
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Contents

| | |
|----------------------------|----|
| List of Tables | ii |
| List of Figures | ii |
| Introduction | 1 |
| Standard Procedures | 1 |
| CTD/Rosette Data | 1 |
| Zooplankton Net Tows | 3 |
| Marine Mammal Observations | 4 |
| Ancillary Observations | 4 |
| Tabulated Data | 5 |
| Figures of Results | 6 |
| Cruise Participants | 6 |
| Literature Cited | 7 |
| Tables | 8 |
| Table 1 | 8 |
| Table 2 | 10 |
| Table 3 | 28 |
| Table 4 | 61 |
| Table 5 | 62 |
| Figures | 66 |
| Figure 3 | 66 |
| Figure 4 | 67 |
| Figure 5 | 68 |
| Figure 6 | 68 |
| Figure 7 | 69 |

List of Tables

| | | |
|----------|---|----|
| Table 1: | Meteorological and sea surface data collected during the PaCOOS cruise of October 2005. | 8 |
| Table 2: | List at standard pressures of hydrographic data collected during the PaCOOS cruise of October 2005. | 10 |
| Table 3: | Results of nutrient and primary productivity analyses of water samples collected at each hydrographic station during the PaCOOS cruise of October 2005. | 28 |
| Table 4: | Zooplankton Data. | 61 |
| Table 5: | Marine Mammal Observations. | 62 |

List of Figures

| | | |
|-----------|---|----|
| Figure 1: | Full CalCOFI hydrographic station grid. | 2 |
| Figure 2: | Hydrographic stations occupied during the PaCOOS cruise of October 2005. | 2 |
| Figure 3: | Contours of (a) temperature ($^{\circ}\text{C}$), (b) salinity, (c) density anomaly (kg m^{-3}), and (d) oxygen ($\mu\text{m kg}^{-1}$) fields along the line of hydrographic stations from Moss Landing (on the left) to Point Reyes. | 66 |
| Figure 4: | Contours of fluorescence (volts) in the upper 100 dbars of the water column along the line of hydrographic stations from Moss Landing (on the left) to Point Reyes. | 67 |
| Figure 5: | Locations of sightings of all marine mammals during the PaCOOS cruise of October 2005. | 68 |
| Figure 6: | Locations of sightings of small marine mammals during the PaCOOS cruise of October 2005. | 68 |
| Figure 7: | Ocean current velocity vectors measured by the ADCP along the track of the ship during the PaCOOS cruise of October 2005. | 69 |

Introduction

Following in a long tradition of hydrographic studies of the California Current system--see, for example, Steger et al. (2000) and Collins et al. (2003)-- the data in this report were collected during the 25-30 October 2005 cruise of the Pacific Coast Ocean Observing System (PaCOOS) program aboard the *R/V Point Sur* of the Moss Landing (California) Marine Laboratories. The PaCOOS program was organized in 2003/2004 as the NOAA west coast contribution to the national Integrated Ocean Observing System (IOOS), and is charged with "providing the ocean information needed for the sustained use of fishery resources and protection of marine species and their ecosystem under a changing climate."¹ PaCOOS cruises generally subsample the standard California Cooperative Oceanic Fisheries Investigations (CalCOFI) grid of hydrographic stations (figure 1). With a slight exception, this cruise did exactly that, sampling along CalCOFI line 67 out of Moss Landing to station 90 (CTD cast 18/19), northwest to CalCOFI line 60/station 90 (CTD cast 23), then shoreward to Point Reyes, California, along CalCOFI line 60 (figure 2). The exception was that, to increase the resolution of the hydrographic data, eight CTD casts were inserted between the standard CalCOFI sites along line 67. Primary productivity and zooplankton analyses were not performed at these added sites. Participants on the cruise came from the Naval Postgraduate School (Physical Oceanography and Marine Mammal Observations), the Monterey Bay Aquarium Research Institute (Nutrient Analysis and Primary Productivity), and the University of California at Santa Cruz (Zooplankton Analysis).

Standard Procedures

CTD/Rosette Data:

At each site a Seabird Electronics, Inc., Conductivity-Temperature-Depth (CTD) instrument fitted with a 12-place rosette was deployed. The rosette was equipped with 12 10-liter PVC Niskin bottles for collection of water samples. The CTD was generally lowered to 1000 meters or the bottom (whichever came first), except that casts were extended to the full ocean depth at CTD stations 18 (4325 dbar) and 23 (4343 dbar). Where primary productivity sampling was performed, water samples were taken at depths designed to maximize resolution of the variables sampled throughout the thermocline. Where only nutrient sampling was performed², water samples were more or less evenly spaced throughout the water column. A water sample was always obtained at the bottom of each CTD cast for later conductivity/salinity calibration of the CTD conductivity sensors.

Besides temperature (dual sensors), conductivity (dual sensors), and pressure, the CTD also measured fluorescence, transmissivity, dissolved oxygen content, and photosynthetically available radiation (PAR) in the water column. Except for PAR and the secondary of the dual sensors, all these parameters are reported here.

¹ <http://www.pacoos.org/Pages/history.htm>

² CTD stations 3, 5, 7, 9, 11, 13, 15, and 17

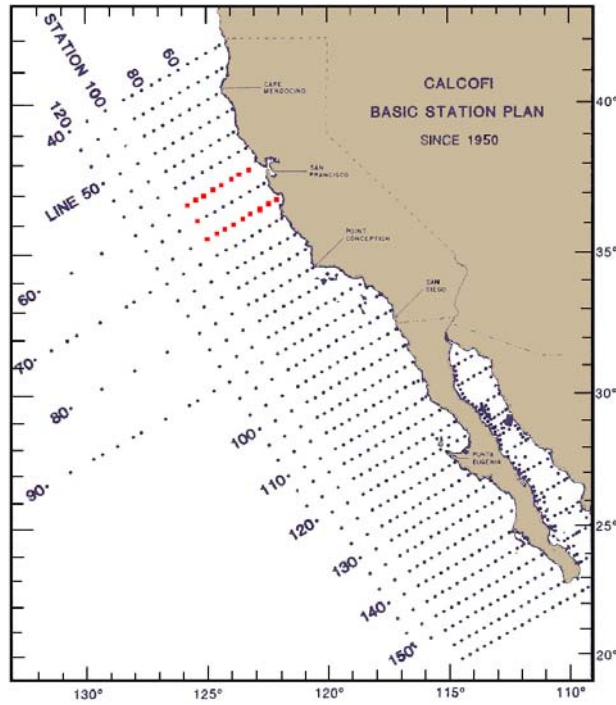


Figure 1: Full CalCOFI hydrographic station grid. Stations occupied during the PaCOOS cruise of October 2005 are highlighted in red.

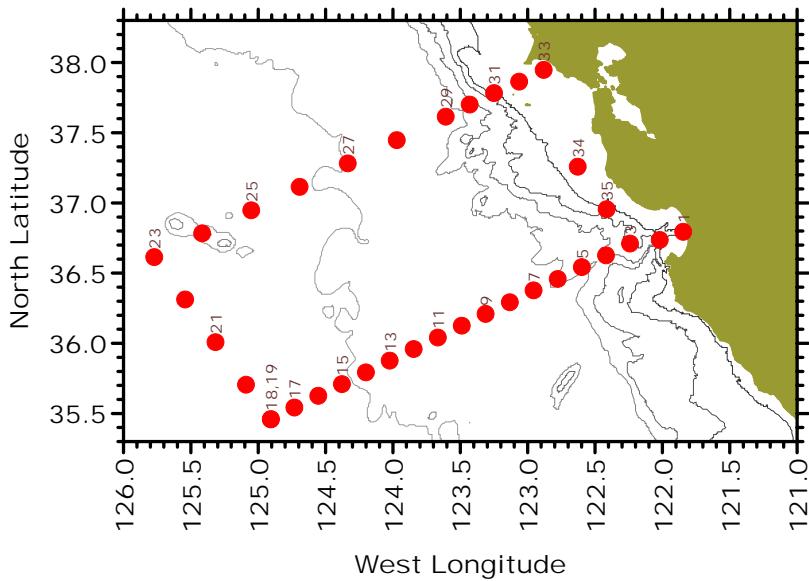


Figure 2: Hydrographic stations occupied during the PaCOOS cruise of October 2005. 200, 1000, 2000, 3000, and 4000 m isobaths are shown.

A minimum of two salinity samples (including the bottom-of-cast sample) were collected from each CTD cast. These samples were returned to the Naval Postgraduate School (NPGS), where they were analyzed using a Guildline model 8400B Autosol salinometer. A regression between the salinometer results and the conductivities measured by the CTD at the times the Niskin bottles were tripped was made, from which a correction to the CTD salinities was determined and then applied. The salinometer was standardized using IAPSO Standard Seawater (batches P143 and P145) before and after each set of water samples was analyzed. Salinity values were calculated using the algorithms for the Practical Salinity Scale, 1978 (UNESCO, 1981).

Dissolved oxygen (Winkler) samples were collected at CTD stations 18 and 27. These were returned to the Monterey Bay Aquarium Research Institute (MBARI) for analysis. The CTD for this cruise was outfitted with a Sea-Bird Electronics, Inc., SBE 43 oxygen sensor. This sensor is a polarographic membrane that outputs a voltage proportional to the temperature-compensated current flow occurring when oxygen is reacted inside the membrane. Dissolved oxygen concentration is then calculated from a modified version of the algorithm by Owens and Millard (1985). The results of the MBARI analysis of the Winkler oxygen samples were compared to the corresponding oxygen values recorded by the CTD. Using the method described in SBE Application Note #64-2³, we calculated new SBE 43 sensor coefficients. Corrected CTD oxygen values were then recalculated with the modified version of the Owens and Millard (1985) algorithm using the new sensor coefficients.

Nutrient samples were collected in 45-ml polypropylene screw-capped containers which were rinsed three times prior to filling. Samples were frozen and returned to MBARI for later analysis on an AlpChem autoanalyzer, as in Sakamoto et al. (1990).

Chlorophyll-*a* and phaeopigments were collected in 280-ml polyethylene bottles and filtered onto 25-mm Whatmann GF/F filters. Chlorophyll-*a* was assayed with the standard fluorometric procedure of Holm-Hansen et al. (1965), modified such that phaeopigments are extracted in acetone in a freezer over at least 24 hours (Venrick and Hayward, 1984; Chavez et al., 1991). Analysis was performed as possible during the cruise or at MBARI immediately following the cruise.

Primary productivity was estimated for the 100, 50, 15, 5, 1, and 0.1% light penetration depths as determined by secchi, and followed the general method of Parsons et al. (1984). Water samples from the appropriate depths were collected in 280-ml polycarbonate bottles, spiked with ¹⁴C, and incubated on deck for 24 hours under running seawater in plexiglass tubes wrapped with nickel-cadmium screens of differing pore size. (See Pennington and Chavez, 2000, for methodology details.)

Zooplankton Net Tows:

Nineteen stations⁴ were sampled for zooplankton during the cruise. All sampling was conducted with 0.7-m diameter paired bongo nets fitted with 505-mm mesh, which were towed obliquely to a depth of 210 m (or within 10 m of the bottom, whichever came

³ http://www.seabird.com/pdf_documents/ApplicationNotes/Appnote64-2Aug05.pdf

⁴ CTD stations 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, and 23-31

first). Samples were preserved at sea according to standard protocols (Kramer et al., 1972). Upon return to the University of California at Santa Cruz (UCSC), all samples were initially measured for total biovolume and subsequently processed for krill species composition and abundance.

Marine Mammal Observations:

Observations of marine mammals were made by a single observer during daylight hours (approximately 1600 to 0100 Coordinated Universal Time [UTC]) throughout the cruise. Observations were made from the forward Bridge deck, where eye height was approximately 9.7 meters above the sea surface, using handheld Fujinon 7 x 50 binoculars with compass for bearing and reticle for distance. Observations were recorded on a laptop computer using the marine mammal and bird mapping program *Seebird*. This program interfaces with handheld global positioning system (GPS) devices, and allows the generation of observation logs containing the observations of the mammals themselves with matching ship's velocities and positions, observational conditions, etc. Generally, intensive "on effort" observations were made during the first half of each half-hour period, with the second half of the half-hour period devoted to less intensive "off effort" observations. Depending on the situation, the observer would take short breaks from the observations approximately every two hours.

Ancillary Observations:

During this cruise, several ancillary systems collected data that are also presented in this technical report.

- 1) *Underway Data:* Near surface measurements of temperature, salinity, and chlorophyll fluorescence were recorded from water pumped through the ship's uncontaminated seawater system. These data, along with meteorological data (air temperature, barometric pressure, etc.) collected from various sensors mounted primarily on the ship's mast, were recorded at approximately 30-second intervals throughout the cruise. Table 1 lists these data at the start of each hydrographic station.
- 2) *ADCP:* Continuous profiles of ocean currents and acoustic backscatter between 10 and 730 meters were measured along the ship's track using hull-mounted Acoustic Doppler Current Profilers (75-kHz Ocean Surveyor, 300-kHz Broad Band). The data were averaged over 5-minute intervals. Because of navigation difficulties, no data are available for the first day of the cruise (figure 7).
- 3) *Rafos:* Two subsurface drifting buoys (Rafos floats) were deployed on 825-day missions near CTD stations 4 and 5.

Tabulated Data

The following tables of data follow:

1) **Table 1:** *Meteorological and Sea Surface Data*

This lists the meteorological and surface oceanographic conditions at the start of each hydrographic station.

2) **Table 2:** *Hydrographic Data*

This is a chronological listing of the hydrographic data collected at each CTD station during the cruise. Data are given for standard pressures, except that the last line of data for each site is the deepest pressure for that CTD cast. The surface pressure, listed as 0 dbar, is actually 2 dbar. Salinities have been adjusted according to the conductivity/salinity calibration correction determined from the collected salinity water samples. The time listed for each station is the beginning (UTC) of the CTD cast. Units of geopotential anomaly ($\Delta\Phi$), potential density (σ_θ), and potential spiciness (π_θ) are m^2s^{-2} , kg m^{-3} , and kg m^{-3} , respectively.

3) **Table 3:** *Nutrient and Primary Productivity Data*

This is a chronological listing of the results of the nutrient and primary productivity analyses of the water samples collected from the 12 Niskin bottles tripped at each hydrographic station. The time given is the start (UTC) for each hydrographic station. Except where primary productivity analyses were not performed (see Introduction), the data for each hydrographic station are separated into two sections (“Physical and Chemical” and “Biological”).

The physical oceanographic properties listed in the first seven columns of the “Physical and Chemical” section of each station’s data are the uncorrected values measured by the CTD at the times each Niskin bottle was tripped. Because they are uncorrected, these values may differ slightly from those listed in Table 1. The last four columns of this section of each station’s data give the nitrate (NO_3), nitrite (NO_2), phosphate (PO_4), and dissolved silicate (SiO_4) concentrations (determined as described previously).

The “Biological” section of each station’s data gives the results of the primary productivity analyses. As stated above, primary productivity sampling was not undertaken at every hydrographic station.

4) **Table 4:** *Zooplankton Data*

Nineteen hydrographic stations—10 on CalCOFI line 67, 9 on CalCOFI line 60—were sampled for zooplankton. This table lists the total biovolume and krill abundance measured. The data are listed by CalCOFI line, onshore to offshore and south to north.

5) Table 5: Marine Mammal Data

This table lists the results of the marine mammal observations made during the cruise. The data are listed by species code, then chronologically within each species code.

Figures of Results

Graphical representations of the data collected during this cruise follow the tabulated data. Figure 3 is a series of four diagrams contouring (a) the temperature ($^{\circ}\text{C}$), (b) the salinity, (c) the density anomaly (kg m^{-3}), and (d) the oxygen ($\mu\text{m kg}^{-1}$) fields along the line of hydrographic stations from Moss Landing to Point Reyes. The two dashed blue lines in each diagram indicate the locations of the corner hydrographic stations (CTDs 18/19 and 23).

Figure 4 contours the fluorescence in the upper 100 meters of the water column along the line of hydrographic stations from Moss Landing to Point Reyes. Again, the dashed blue lines indicate the locations of the corner hydrographic stations.

Figures 5 and 6 chart the locations of marine mammal sightings: figure 5 shows all sightings, while figure 6 shows only the smaller marine mammal (that is, no large whales) sightings.

Finally, figure 7 shows the ADCP velocities measured along the ship's track, except that there are no data for the first day of the cruise, during which time there was difficulty with the navigation input to the ADCP.

Cruise Participants

| Personnel | Duties | Institutional Affiliation |
|--|--|---|
| Curtis Collins (Chief Sci.) Tarry Rago Katherine Whitaker | Physical Oceanography Physical Oceanography Marine Mammal Obs. | Naval Postgraduate School |
| Tim Pennington Marguerite Blum Erich Reinecker Jen King Mark Harlan Sarah Ashby | Nutrients, Primary Prod. Nutrients, Primary Prod. Nutrients Nutrients Nutrients Nutrients | Monterey Bay Aquarium Research Institute |
| Asila Ghouli Ann Vassilieva | Phytoplankton Net Tows Phytoplankton Net Tows | Univ. of CA at Santa Cruz |
| Ben Jokinen | Ship's Technician | Moss Landing Marine Labs |

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Tables

Table 1: *Meteorological and sea surface data collected during the PaCOOS cruise of October 2005.* Listed here are the meteorological and surface oceanographic conditions as measured by the underway data acquisition system of the *R/V Point Sur* at the beginning of each hydrographic station. Continuous measurements of the water being pumped through the ship's uncontaminated seawater system ("sea chest") from approximately 3 meters below the surface supplied the oceanographic data, while instrumentation atop the ship's mast (except for the barometer, which was mounted on the Bridge) supplied the meteorological data. For obvious reasons, shortwave radiation disappeared with darkness at night.

| Station | Yearday, 2005 (UTC) | Air Temperature (°C) | Humidity (percent) | Barometric Pressure (mb) | Shortwave Radiation (watts/m ²) | Wind Speed (m/s) | Wind Direction (°T) | Sea Surface Temperature (°C) | Sea Surface Salinity |
|---------|---------------------------|----------------------------|-----------------------|--------------------------------|---|------------------------|---------------------------|------------------------------------|----------------------------|
| 1 | 298.7049 | 12.5 | 96.0 | 1022.7 | 216.6 | 0.5 | 288.7 | 13.00 | 33.36 |
| 2 | 298.7884 | 13.6 | 89.5 | 1022.8 | 616.1 | 1.1 | 247.9 | 13.37 | 33.33 |
| 3 | 298.9042 | 14.0 | 78.7 | 1022.3 | 62.7 | 2.4 | 16.4 | 14.73 | 33.25 |
| 4 | 298.9909 | 14.1 | 83.8 | 1022.4 | 90.0 | 2.6 | 16.2 | 13.75 | 33.39 |
| 5 | 299.1032 | 13.8 | 84.6 | 1022.1 | 0.0 | 2.5 | 78.5 | 13.48 | 33.38 |
| 6 | 299.1890 | 14.3 | 89.1 | 1022.8 | 0.0 | 1.6 | 52.2 | 14.45 | 33.27 |
| 7 | 299.2928 | 14.8 | 90.2 | 1022.6 | 0.0 | 4.1 | 61.0 | 14.89 | 33.22 |
| 8 | 299.3746 | 15.8 | 90.9 | 1021.4 | 0.0 | 5.1 | 66.8 | 16.04 | 33.22 |
| 9 | 299.4723 | 16.3 | 89.1 | 1020.8 | 0.3 | 5.0 | 60.7 | 16.24 | 33.22 |
| 10 | 299.5613 | 16.7 | 88.3 | 1020.0 | 0.4 | 5.8 | 49.2 | 16.36 | 33.19 |
| 11 | 299.6903 | 14.7 | 89.8 | 1020.9 | 246.6 | 5.2 | 278.8 | 16.18 | 33.21 |
| 12 | 299.7765 | 14.9 | 83.9 | 1020.9 | 515.8 | 3.9 | 305.2 | 16.45 | 33.22 |
| 13 | 299.8836 | 14.6 | 78.9 | 1019.3 | 149.8 | 5.1 | 282.5 | 16.68 | 33.21 |
| 14 | 299.9610 | 14.9 | 76.3 | 1019.1 | 19.8 | 4.2 | 289.1 | 16.86 | 33.24 |
| 15 | 300.0659 | 15.1 | 75.2 | 1018.7 | 0.1 | 3.8 | 297.2 | 17.04 | 33.34 |
| 16 | 300.1490 | 15.5 | 70.6 | 1019.3 | 0.0 | 4.2 | 303.8 | 16.96 | 33.32 |
| 17 | 300.2537 | 15.6 | 71.7 | 1019.1 | 0.0 | 2.6 | 311.0 | 16.83 | 33.24 |
| 18 | 300.3597 | 15.5 | 71.3 | 1018.6 | 0.0 | 2.7 | 4.0 | 16.61 | 33.07 |
| 19 | 300.6328 | 15.7 | 77.3 | 1017.6 | 0.9 | 5.2 | 60.6 | 16.49 | 33.16 |
| 20 | 300.7341 | 16.2 | 79.6 | 1017.1 | 14.3 | 7.3 | 75.1 | 16.75 | 33.24 |
| 21 | 300.8695 | 16.3 | 83.9 | 1014.9 | 265.3 | 8.8 | 81.7 | 16.71 | 33.23 |
| 22 | 301.0040 | 16.0 | 89.5 | 1013.3 | 17.9 | 9.0 | 96.1 | 16.63 | 33.22 |
| 23 | 301.1571 | 16.5 | 90.6 | 1012.8 | 0.0 | 9.4 | 86.8 | 16.20 | 33.20 |
| 24 | 301.3784 | 14.5 | 94.6 | 1014.0 | 0.5 | 5.7 | 287.0 | 16.24 | 33.22 |
| 25 | 301.5757 | 13.8 | 94.4 | 1015.9 | 0.0 | 3.5 | 278.6 | 15.23 | 33.10 |
| 26 | 301.7256 | 14.0 | 93.9 | 1017.4 | 64.9 | 2.6 | 247.8 | 15.29 | 33.24 |
| 27 | 301.8887 | 14.2 | 90.2 | 1017.7 | 118.0 | 2.3 | 247.7 | 15.08 | 33.17 |
| 28 | 302.0481 | 14.1 | 89.9 | 1017.9 | 12.1 | 3.2 | 301.1 | 14.72 | 33.20 |

| Station | Yearday, 2005 (UTC) | Air Temperature (°C) | Humidity (percent) | Barometric Pressure (mb) | Shortwave Radiation (watts/m ²) | Wind Speed (m/s) | Wind Direction (°T) | Sea Surface Temperature (°C) | Sea Surface Salinity |
|---------|---------------------------|----------------------------|-----------------------|--------------------------------|---|------------------------|---------------------------|------------------------------------|----------------------------|
| 29 | 302.2126 | 14.1 | 93.1 | 1019.7 | 0.0 | 5.8 | 317.2 | 14.62 | 33.20 |
| 30 | 302.3253 | 12.7 | 96.2 | 1020.2 | 0.0 | 5.9 | 288.4 | 14.34 | 33.22 |
| 31 | 302.4389 | 11.8 | 97.1 | 1021.2 | 0.0 | 4.0 | 304.0 | 14.53 | 33.23 |
| 32 | 302.5246 | 10.9 | 97.4 | 1021.7 | 0.0 | 4.3 | 297.7 | 13.10 | 33.25 |
| 33 | 302.5920 | 10.6 | 97.6 | 1022.3 | 0.5 | 3.8 | 318.2 | 12.87 | 33.19 |
| 34 | 302.9643 | 13.4 | 85.9 | 1023.5 | 1.0 | 6.8 | 298.0 | 13.21 | 33.38 |
| 35 | 303.0749 | 13.3 | 86.2 | 1023.0 | 0.0 | 8.4 | 291.8 | 13.36 | 33.34 |

Table 2: *List at standard pressures of hydrographic data collected during the PaCOOS cruise of October 2005. Stations are in chronological (and numerical) order. For each cast, the surface pressure (listed as 0 dbar) is actually 2 dbar, while the last pressure is the deepest pressure of the cast. Salinities have been adjusted according to the calibration correction determined from the collected salinity water samples. The time listed for each station is the beginning (<mm/dd/yyyy, hhmm> UTC) of the CTD cast. Units of geopotential anomaly ($\Delta\Phi$), potential density (σ_θ), and potential spiciness (π_θ) are m^2s^{-2} , kg m^{-3} , and kg m^{-3} , respectively.*

Station: 1 **Date:** 10/25/2005, 1650 **Lat.:** 36° 47.69 N **Long.:** 121° 50.77 W

| P(dbar) | T(°C) | S | O ₂ ($\mu\text{m/kg}$) | Xmiss(%) | $\Delta\Phi$ | σ_θ | π_θ |
|---------|--------|--------|-------------------------------------|----------|--------------|-----------------|--------------|
| 0 | 12.764 | 33.364 | 319.5 | 68.1 | 0.056 | 25.172 | 0.359 |
| 10 | 12.668 | 33.393 | 289.3 | 82.7 | 0.277 | 25.213 | 0.363 |
| 20 | 12.065 | 33.447 | 245.5 | 91.1 | 0.544 | 25.371 | 0.287 |
| 30 | 11.376 | 33.461 | 213.1 | 92.5 | 0.795 | 25.510 | 0.167 |
| 50 | 10.500 | 33.641 | 163.8 | 89.7 | 1.259 | 25.806 | 0.150 |
| 75 | 10.211 | 33.705 | 138.9 | 83.8 | 1.790 | 25.907 | 0.150 |
| 100 | 10.080 | 33.729 | 130.7 | 83.0 | 2.309 | 25.948 | 0.145 |
| 125 | 9.791 | 33.770 | 120.1 | 88.9 | 2.817 | 26.029 | 0.129 |
| 150 | 9.505 | 33.832 | 110.2 | 88.0 | 3.307 | 26.125 | 0.129 |
| 200 | 8.156 | 34.050 | 72.5 | 83.7 | 4.181 | 26.507 | 0.088 |
| 250 | 7.662 | 34.113 | 59.5 | 80.2 | 4.926 | 26.630 | 0.064 |
| 278 | 7.537 | 34.126 | 56.9 | 83.6 | 5.327 | 26.659 | 0.056 |

Station: 2 **Date:** 10/25/2005, 1846 **Lat.:** 36° 44.19 N **Long.:** 122° 01.22 W

| P(dbar) | T(°C) | S | O ₂ ($\mu\text{m/kg}$) | Xmiss(%) | $\Delta\Phi$ | σ_θ | π_θ |
|---------|--------|--------|-------------------------------------|----------|--------------|-----------------|--------------|
| 0 | 12.766 | 33.351 | 284.7 | 85.0 | 0.056 | 25.162 | 0.349 |
| 10 | 12.427 | 33.377 | 269.6 | 90.5 | 0.276 | 25.247 | 0.302 |
| 20 | 12.070 | 33.406 | 247.8 | 91.7 | 0.545 | 25.338 | 0.255 |
| 30 | 11.534 | 33.407 | 218.8 | 92.7 | 0.805 | 25.439 | 0.153 |
| 50 | 10.575 | 33.484 | 177.6 | 92.9 | 1.286 | 25.671 | 0.039 |
| 75 | 10.299 | 33.633 | 151.4 | 92.7 | 1.840 | 25.835 | 0.108 |
| 100 | 10.097 | 33.803 | 120.6 | 92.5 | 2.362 | 26.003 | 0.207 |
| 125 | 10.056 | 33.853 | 112.0 | 92.6 | 2.860 | 26.049 | 0.239 |
| 150 | 9.983 | 33.882 | 108.1 | 92.6 | 3.350 | 26.085 | 0.249 |
| 200 | 9.656 | 33.947 | 103.5 | 93.0 | 4.300 | 26.191 | 0.244 |
| 250 | 9.104 | 33.982 | 101.1 | 93.7 | 5.207 | 26.309 | 0.181 |
| 300 | 8.405 | 34.108 | 71.4 | 92.6 | 6.040 | 26.517 | 0.170 |
| 400 | 7.158 | 34.156 | 49.8 | 92.4 | 7.503 | 26.737 | 0.024 |
| 500 | 6.021 | 34.221 | 24.0 | 93.8 | 8.766 | 26.940 | -0.076 |
| 600 | 5.463 | 34.294 | 17.6 | 91.9 | 9.871 | 27.067 | -0.087 |
| 700 | 5.056 | 34.343 | 16.0 | 90.1 | 10.881 | 27.155 | -0.097 |
| 800 | 4.820 | 34.370 | 14.9 | 90.0 | 11.843 | 27.204 | -0.103 |
| 900 | 4.379 | 34.414 | 17.7 | 88.0 | 12.750 | 27.288 | -0.117 |
| 1000 | 3.898 | 34.459 | 23.1 | 84.0 | 13.571 | 27.374 | -0.132 |
| 1011 | 3.870 | 34.461 | 23.6 | 82.9 | 13.657 | 27.379 | -0.133 |

Station: 3 Date: 10/25/2005, 2132 Lat.: 36° 42.65 N Long.: 122° 14.47 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 13.872 | 33.263 | 376.8 | 83.8 | 0.061 | 24.871 | 0.508 |
| 10 | 13.331 | 33.291 | 289.5 | 88.5 | 0.302 | 25.004 | 0.417 |
| 20 | 12.671 | 33.302 | 266.1 | 90.2 | 0.590 | 25.142 | 0.291 |
| 30 | 12.070 | 33.367 | 239.6 | 92.0 | 0.864 | 25.308 | 0.224 |
| 50 | 10.427 | 33.478 | 191.9 | 92.6 | 1.348 | 25.692 | 0.008 |
| 75 | 9.364 | 33.604 | 156.6 | 93.8 | 1.890 | 25.968 | -0.073 |
| 100 | 9.505 | 33.883 | 115.9 | 93.6 | 2.371 | 26.164 | 0.170 |
| 125 | 9.337 | 34.025 | 94.6 | 93.3 | 2.822 | 26.303 | 0.255 |
| 150 | 9.157 | 34.059 | 88.6 | 93.3 | 3.249 | 26.359 | 0.252 |
| 200 | 8.873 | 34.084 | 84.7 | 93.7 | 4.082 | 26.425 | 0.226 |
| 250 | 8.569 | 34.111 | 78.2 | 93.9 | 4.887 | 26.493 | 0.198 |
| 300 | 7.660 | 34.080 | 81.0 | 94.1 | 5.642 | 26.605 | 0.037 |
| 400 | 6.521 | 34.113 | 50.5 | 94.1 | 7.039 | 26.789 | -0.096 |
| 500 | 5.825 | 34.205 | 22.4 | 94.1 | 8.263 | 26.951 | -0.113 |
| 600 | 5.394 | 34.291 | 12.1 | 93.9 | 9.363 | 27.073 | -0.097 |
| 700 | 5.025 | 34.348 | 8.5 | 93.8 | 10.370 | 27.162 | -0.096 |
| 800 | 4.486 | 34.403 | 9.5 | 94.0 | 11.290 | 27.266 | -0.113 |
| 900 | 4.122 | 34.438 | 13.1 | 93.9 | 12.141 | 27.334 | -0.125 |
| 1000 | 3.945 | 34.457 | 16.1 | 93.3 | 12.952 | 27.368 | -0.128 |
| 1012 | 3.926 | 34.459 | 16.7 | 93.3 | 13.047 | 27.371 | -0.128 |

Station: 4 Date: 10/25/2005, 2337 Lat.: 36° 37.60 N Long.: 122° 25.13 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 12.427 | 33.433 | 288.2 | 89.1 | 0.053 | 25.291 | 0.347 |
| 10 | 12.104 | 33.464 | 272.2 | 87.0 | 0.263 | 25.377 | 0.308 |
| 20 | 11.506 | 33.528 | 243.0 | 90.3 | 0.510 | 25.538 | 0.245 |
| 30 | 11.470 | 33.553 | 242.2 | 90.4 | 0.753 | 25.564 | 0.257 |
| 50 | 11.373 | 33.565 | 235.0 | 90.8 | 1.234 | 25.592 | 0.248 |
| 75 | 10.417 | 33.572 | 169.9 | 92.5 | 1.816 | 25.768 | 0.080 |
| 100 | 9.817 | 33.628 | 150.3 | 93.1 | 2.359 | 25.913 | 0.020 |
| 125 | 9.358 | 33.775 | 132.0 | 93.5 | 2.859 | 26.104 | 0.060 |
| 150 | 9.206 | 33.868 | 119.1 | 93.6 | 3.329 | 26.202 | 0.109 |
| 200 | 8.969 | 34.054 | 85.4 | 93.8 | 4.201 | 26.386 | 0.217 |
| 250 | 8.781 | 34.115 | 74.9 | 93.9 | 5.020 | 26.463 | 0.234 |
| 300 | 8.291 | 34.124 | 74.1 | 94.0 | 5.806 | 26.547 | 0.165 |
| 400 | 7.035 | 34.133 | 54.1 | 93.9 | 7.264 | 26.736 | -0.011 |
| 500 | 5.999 | 34.207 | 25.4 | 93.9 | 8.534 | 26.932 | -0.089 |
| 600 | 5.150 | 34.316 | 9.8 | 93.8 | 9.614 | 27.121 | -0.106 |
| 700 | 4.657 | 34.337 | 7.1 | 94.1 | 10.591 | 27.194 | -0.146 |
| 800 | 4.482 | 34.394 | 8.5 | 94.1 | 11.501 | 27.260 | -0.121 |
| 900 | 4.266 | 34.423 | 11.3 | 93.9 | 12.366 | 27.307 | -0.121 |
| 1000 | 3.939 | 34.457 | 15.9 | 93.8 | 13.185 | 27.368 | -0.129 |
| 1013 | 3.915 | 34.459 | 16.3 | 93.8 | 13.288 | 27.372 | -0.130 |

Station: 5 Date: 10/26/2005, 0219 Lat.: 36° 32.59 N Long.: 122° 35.94 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 13.088 | 33.397 | 384.4 | 68.8 | 0.056 | 25.133 | 0.451 |
| 10 | 12.878 | 33.401 | 343.9 | 72.6 | 0.280 | 25.178 | 0.411 |
| 20 | 12.418 | 33.416 | 287.7 | 89.4 | 0.552 | 25.280 | 0.332 |
| 30 | 12.026 | 33.449 | 266.6 | 91.0 | 0.815 | 25.381 | 0.281 |
| 50 | 11.543 | 33.493 | 238.4 | 92.0 | 1.326 | 25.505 | 0.223 |
| 75 | 10.264 | 33.617 | 161.5 | 92.9 | 1.904 | 25.829 | 0.089 |
| 100 | 9.901 | 33.732 | 138.9 | 93.1 | 2.428 | 25.980 | 0.117 |
| 125 | 9.680 | 33.886 | 111.8 | 93.1 | 2.918 | 26.138 | 0.202 |
| 150 | 9.487 | 33.942 | 100.6 | 93.4 | 3.382 | 26.214 | 0.213 |
| 200 | 9.283 | 34.080 | 75.6 | 93.8 | 4.255 | 26.356 | 0.288 |
| 250 | 8.728 | 34.095 | 77.2 | 93.9 | 5.083 | 26.456 | 0.210 |
| 300 | 8.126 | 34.145 | 67.5 | 94.0 | 5.857 | 26.588 | 0.157 |
| 400 | 6.994 | 34.156 | 48.6 | 94.1 | 7.278 | 26.760 | 0.001 |
| 500 | 5.905 | 34.218 | 22.1 | 94.1 | 8.516 | 26.952 | -0.092 |
| 600 | 5.396 | 34.284 | 11.4 | 94.0 | 9.627 | 27.067 | -0.103 |
| 700 | 4.791 | 34.334 | 7.6 | 94.0 | 10.637 | 27.177 | -0.134 |
| 800 | 4.467 | 34.403 | 9.5 | 93.8 | 11.551 | 27.268 | -0.115 |
| 900 | 4.183 | 34.430 | 12.0 | 93.9 | 12.409 | 27.321 | -0.125 |
| 1000 | 3.899 | 34.447 | 14.1 | 93.9 | 13.225 | 27.364 | -0.141 |
| 1012 | 3.846 | 34.451 | 14.7 | 93.9 | 13.320 | 27.373 | -0.143 |

Station: 6 Date: 10/26/2005, 0423 Lat.: 36° 27.49 N Long.: 122° 46.63 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 14.188 | 33.282 | 275.4 | 88.2 | 0.062 | 24.821 | 0.591 |
| 10 | 13.671 | 33.292 | 256.1 | 89.6 | 0.306 | 24.935 | 0.488 |
| 20 | 12.083 | 33.320 | 217.1 | 92.5 | 0.590 | 25.270 | 0.190 |
| 30 | 11.385 | 33.373 | 198.9 | 93.1 | 0.849 | 25.440 | 0.099 |
| 50 | 10.416 | 33.561 | 158.9 | 93.3 | 1.328 | 25.759 | 0.072 |
| 75 | 9.877 | 33.716 | 133.4 | 93.5 | 1.858 | 25.972 | 0.101 |
| 100 | 9.751 | 33.842 | 112.8 | 93.2 | 2.354 | 26.091 | 0.179 |
| 125 | 9.682 | 33.940 | 92.2 | 93.5 | 2.825 | 26.180 | 0.245 |
| 150 | 9.646 | 34.043 | 74.9 | 93.6 | 3.278 | 26.267 | 0.320 |
| 200 | 8.951 | 34.064 | 85.0 | 93.7 | 4.131 | 26.397 | 0.222 |
| 250 | 8.987 | 34.189 | 58.0 | 94.0 | 4.940 | 26.490 | 0.325 |
| 300 | 8.479 | 34.182 | 57.5 | 94.1 | 5.715 | 26.564 | 0.240 |
| 400 | 7.414 | 34.221 | 37.8 | 94.1 | 7.129 | 26.753 | 0.111 |
| 500 | 6.504 | 34.230 | 26.1 | 94.2 | 8.415 | 26.885 | -0.007 |
| 600 | 5.605 | 34.257 | 14.8 | 94.2 | 9.578 | 27.020 | -0.100 |
| 700 | 4.998 | 34.344 | 7.6 | 94.2 | 10.613 | 27.162 | -0.103 |
| 800 | 4.636 | 34.399 | 8.7 | 94.1 | 11.545 | 27.247 | -0.101 |
| 900 | 4.152 | 34.426 | 11.2 | 94.1 | 12.409 | 27.321 | -0.131 |
| 1000 | 3.873 | 34.449 | 14.2 | 94.1 | 13.220 | 27.369 | -0.141 |
| 1012 | 3.831 | 34.452 | 14.6 | 94.1 | 13.314 | 27.375 | -0.143 |

Station: 7 Date: 10/26/2005, 0652 Lat.: 36° 22.68 N Long.: 122° 57.42 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 14.672 | 33.231 | 295.0 | 88.1 | 0.065 | 24.679 | 0.656 |
| 10 | 13.545 | 33.257 | 294.2 | 86.4 | 0.316 | 24.934 | 0.434 |
| 20 | 12.525 | 33.290 | 259.6 | 86.4 | 0.607 | 25.162 | 0.252 |
| 30 | 12.004 | 33.460 | 257.3 | 91.3 | 0.872 | 25.393 | 0.285 |
| 50 | 10.721 | 33.538 | 184.4 | 92.8 | 1.358 | 25.688 | 0.108 |
| 75 | 9.959 | 33.707 | 138.2 | 92.9 | 1.892 | 25.951 | 0.108 |
| 100 | 9.745 | 33.810 | 117.6 | 92.1 | 2.389 | 26.067 | 0.153 |
| 125 | 9.561 | 33.877 | 108.9 | 92.7 | 2.868 | 26.150 | 0.174 |
| 150 | 9.315 | 33.941 | 101.2 | 93.1 | 3.328 | 26.241 | 0.184 |
| 200 | 8.880 | 34.051 | 90.8 | 93.8 | 4.189 | 26.397 | 0.200 |
| 250 | 8.481 | 34.107 | 79.0 | 93.9 | 4.992 | 26.504 | 0.181 |
| 300 | 8.174 | 34.158 | 64.3 | 94.0 | 5.755 | 26.592 | 0.175 |
| 400 | 6.832 | 34.139 | 49.5 | 94.1 | 7.169 | 26.768 | -0.034 |
| 500 | 6.024 | 34.169 | 30.5 | 94.1 | 8.439 | 26.898 | -0.117 |
| 600 | 5.678 | 34.248 | 16.4 | 94.2 | 9.604 | 27.005 | -0.098 |
| 700 | 5.145 | 34.315 | 8.6 | 94.2 | 10.670 | 27.122 | -0.109 |
| 800 | 4.745 | 34.378 | 7.7 | 94.2 | 11.642 | 27.218 | -0.105 |
| 900 | 4.416 | 34.420 | 10.2 | 94.1 | 12.535 | 27.288 | -0.108 |
| 1000 | 3.987 | 34.452 | 14.7 | 94.2 | 13.370 | 27.360 | -0.128 |
| 1011 | 3.942 | 34.456 | 15.0 | 94.2 | 13.458 | 27.367 | -0.130 |

Station: 8 Date: 10/26/2005, 0851 Lat.: 36° 17.55 N Long.: 123° 07.97 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 15.927 | 33.231 | 254.2 | 90.8 | 0.070 | 24.404 | 0.939 |
| 10 | 15.666 | 33.235 | 259.4 | 90.1 | 0.350 | 24.465 | 0.881 |
| 20 | 13.579 | 33.331 | 293.4 | 82.5 | 0.674 | 24.984 | 0.499 |
| 30 | 12.517 | 33.415 | 268.9 | 90.9 | 0.956 | 25.260 | 0.350 |
| 50 | 11.011 | 33.520 | 200.2 | 92.7 | 1.460 | 25.622 | 0.146 |
| 75 | 10.128 | 33.647 | 141.5 | 93.1 | 2.017 | 25.875 | 0.089 |
| 100 | 9.788 | 33.734 | 125.3 | 93.4 | 2.532 | 26.001 | 0.100 |
| 125 | 9.303 | 33.948 | 98.5 | 93.6 | 3.003 | 26.248 | 0.188 |
| 150 | 9.082 | 34.039 | 86.7 | 93.8 | 3.439 | 26.355 | 0.224 |
| 200 | 8.590 | 34.098 | 80.7 | 93.9 | 4.254 | 26.479 | 0.192 |
| 250 | 8.211 | 34.137 | 71.8 | 94.0 | 5.026 | 26.568 | 0.164 |
| 300 | 7.469 | 34.120 | 65.1 | 94.1 | 5.758 | 26.664 | 0.041 |
| 400 | 6.500 | 34.139 | 43.3 | 94.1 | 7.105 | 26.812 | -0.078 |
| 500 | 5.848 | 34.196 | 24.0 | 94.1 | 8.324 | 26.942 | -0.117 |
| 600 | 5.363 | 34.287 | 11.4 | 94.1 | 9.431 | 27.074 | -0.104 |
| 700 | 4.988 | 34.355 | 7.8 | 94.1 | 10.442 | 27.172 | -0.095 |
| 800 | 4.619 | 34.401 | 8.9 | 94.1 | 11.374 | 27.250 | -0.101 |
| 900 | 4.217 | 34.426 | 11.0 | 94.1 | 12.245 | 27.314 | -0.124 |
| 1000 | 3.934 | 34.455 | 15.1 | 94.2 | 13.062 | 27.367 | -0.131 |
| 1011 | 3.919 | 34.457 | 15.5 | 94.2 | 13.149 | 27.370 | -0.131 |

Station: 9 Date: 10/26/2005, 1111 Lat.: 36° 12.60 N Long.: 123° 18.78 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 2 | 16.085 | 33.224 | 253.6 | 90.8 | 0.071 | 24.362 | 0.970 |
| 10 | 15.915 | 33.221 | 256.2 | 91.5 | 0.355 | 24.399 | 0.928 |
| 20 | 15.849 | 33.221 | 251.6 | 91.6 | 0.707 | 24.414 | 0.912 |
| 30 | 15.525 | 33.211 | 254.5 | 91.7 | 1.054 | 24.479 | 0.829 |
| 50 | 11.143 | 33.075 | 224.8 | 93.0 | 1.672 | 25.252 | -0.185 |
| 75 | 9.633 | 33.402 | 189.0 | 93.9 | 2.287 | 25.767 | -0.190 |
| 100 | 9.108 | 33.610 | 159.3 | 93.9 | 2.813 | 26.015 | -0.111 |
| 125 | 8.959 | 33.827 | 123.9 | 93.9 | 3.288 | 26.208 | 0.037 |
| 150 | 8.625 | 33.987 | 103.8 | 94.0 | 3.719 | 26.386 | 0.111 |
| 200 | 8.221 | 34.089 | 86.0 | 94.1 | 4.515 | 26.528 | 0.128 |
| 250 | 7.874 | 34.137 | 69.2 | 94.1 | 5.259 | 26.618 | 0.114 |
| 300 | 7.192 | 34.131 | 58.4 | 94.1 | 5.966 | 26.711 | 0.010 |
| 400 | 6.438 | 34.188 | 34.0 | 94.1 | 7.268 | 26.860 | -0.047 |
| 500 | 5.631 | 34.243 | 17.7 | 93.9 | 8.443 | 27.005 | -0.106 |
| 600 | 5.181 | 34.289 | 9.9 | 94.2 | 9.509 | 27.096 | -0.124 |
| 700 | 4.778 | 34.332 | 7.1 | 94.2 | 10.506 | 27.177 | -0.137 |
| 800 | 4.557 | 34.404 | 8.8 | 94.2 | 11.427 | 27.260 | -0.105 |
| 900 | 4.233 | 34.441 | 12.8 | 94.2 | 12.284 | 27.324 | -0.111 |
| 1000 | 3.891 | 34.464 | 16.4 | 94.2 | 13.093 | 27.379 | -0.128 |
| 1013 | 3.849 | 34.468 | 17.3 | 94.2 | 13.194 | 27.386 | -0.129 |

Station: 10 Date: 10/26/2005, 1318 Lat.: 36° 07.55 N Long.: 123° 29.36 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.178 | 33.197 | 251.7 | 90.8 | 0.072 | 24.321 | 0.971 |
| 10 | 16.167 | 33.196 | 254.7 | 91.0 | 0.360 | 24.323 | 0.967 |
| 20 | 16.035 | 33.195 | 250.7 | 90.5 | 0.718 | 24.353 | 0.935 |
| 30 | 15.988 | 33.199 | 252.7 | 90.8 | 1.074 | 24.366 | 0.927 |
| 50 | 15.321 | 33.185 | 241.9 | 92.2 | 1.781 | 24.505 | 0.762 |
| 75 | 10.978 | 33.310 | 204.5 | 93.3 | 2.503 | 25.465 | -0.028 |
| 100 | 9.617 | 33.414 | 180.4 | 93.9 | 3.089 | 25.779 | -0.183 |
| 125 | 9.058 | 33.654 | 154.5 | 94.0 | 3.614 | 26.057 | -0.084 |
| 150 | 8.745 | 33.876 | 124.6 | 93.9 | 4.075 | 26.281 | 0.041 |
| 200 | 8.077 | 33.997 | 116.2 | 94.0 | 4.910 | 26.478 | 0.034 |
| 250 | 7.335 | 34.014 | 108.9 | 94.1 | 5.669 | 26.599 | -0.061 |
| 300 | 7.056 | 34.104 | 64.2 | 94.1 | 6.381 | 26.709 | -0.030 |
| 400 | 6.221 | 34.149 | 36.4 | 94.1 | 7.683 | 26.856 | -0.106 |
| 500 | 5.446 | 34.191 | 21.4 | 94.2 | 8.863 | 26.986 | -0.170 |
| 600 | 5.147 | 34.274 | 10.6 | 94.2 | 9.939 | 27.088 | -0.140 |
| 700 | 4.915 | 34.361 | 7.6 | 94.2 | 10.931 | 27.185 | -0.098 |
| 800 | 4.410 | 34.390 | 8.1 | 94.2 | 11.849 | 27.264 | -0.131 |
| 900 | 4.059 | 34.427 | 11.5 | 94.2 | 12.697 | 27.331 | -0.140 |
| 1000 | 3.888 | 34.468 | 17.3 | 94.2 | 13.495 | 27.382 | -0.126 |
| 1010 | 3.857 | 34.470 | 17.9 | 94.2 | 13.573 | 27.387 | -0.127 |

Station: 11 Date: 10/26/2005, 1625 Lat.: 36° 02.56 N Long.: 123° 40.06 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 15.985 | 33.220 | 259.8 | 90.3 | 0.071 | 24.382 | 0.944 |
| 10 | 15.957 | 33.223 | 256.2 | 90.2 | 0.354 | 24.391 | 0.940 |
| 20 | 15.745 | 33.225 | 255.4 | 90.5 | 0.704 | 24.440 | 0.891 |
| 30 | 15.607 | 33.209 | 254.4 | 91.5 | 1.052 | 24.459 | 0.847 |
| 50 | 13.123 | 33.026 | 249.5 | 92.4 | 1.723 | 24.841 | 0.162 |
| 75 | 10.616 | 33.232 | 208.1 | 93.6 | 2.414 | 25.468 | -0.156 |
| 100 | 9.502 | 33.448 | 187.7 | 94.0 | 2.993 | 25.825 | -0.175 |
| 125 | 8.853 | 33.701 | 166.3 | 94.0 | 3.500 | 26.126 | -0.080 |
| 150 | 8.671 | 33.873 | 140.2 | 94.0 | 3.955 | 26.289 | 0.027 |
| 200 | 8.206 | 34.025 | 101.3 | 94.0 | 4.787 | 26.480 | 0.075 |
| 250 | 7.322 | 34.030 | 94.4 | 94.1 | 5.544 | 26.613 | -0.050 |
| 300 | 6.746 | 34.057 | 73.1 | 94.1 | 6.248 | 26.714 | -0.109 |
| 400 | 6.122 | 34.162 | 32.4 | 94.1 | 7.535 | 26.879 | -0.108 |
| 500 | 5.422 | 34.207 | 18.2 | 94.2 | 8.702 | 27.002 | -0.160 |
| 600 | 5.000 | 34.291 | 8.7 | 94.2 | 9.758 | 27.118 | -0.144 |
| 700 | 4.714 | 34.343 | 6.8 | 94.2 | 10.730 | 27.193 | -0.135 |
| 800 | 4.349 | 34.401 | 9.1 | 94.2 | 11.630 | 27.279 | -0.130 |
| 900 | 4.099 | 34.445 | 14.7 | 94.2 | 12.468 | 27.341 | -0.122 |
| 1000 | 3.796 | 34.467 | 20.1 | 94.3 | 13.260 | 27.391 | -0.135 |
| 1011 | 3.772 | 34.470 | 20.9 | 94.3 | 13.344 | 27.395 | -0.136 |

Station: 12 Date: 10/26/2005, 1829 Lat.: 35° 57.58 N Long.: 123° 50.82 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.246 | 33.233 | 256.1 | 90.6 | 0.072 | 24.333 | 1.015 |
| 10 | 16.217 | 33.234 | 254.4 | 90.4 | 0.358 | 24.341 | 1.008 |
| 20 | 16.133 | 33.249 | 252.1 | 91.6 | 0.715 | 24.372 | 1.000 |
| 30 | 15.861 | 33.230 | 253.3 | 91.9 | 1.067 | 24.419 | 0.922 |
| 50 | 12.025 | 33.054 | 234.5 | 92.8 | 1.712 | 25.075 | -0.034 |
| 75 | 10.456 | 33.390 | 186.6 | 93.6 | 2.360 | 25.618 | -0.058 |
| 100 | 9.150 | 33.566 | 179.4 | 94.0 | 2.906 | 25.973 | -0.139 |
| 125 | 8.925 | 33.801 | 131.2 | 94.0 | 3.386 | 26.193 | 0.011 |
| 150 | 8.607 | 33.910 | 117.0 | 94.0 | 3.829 | 26.329 | 0.047 |
| 200 | 8.116 | 34.041 | 94.3 | 94.0 | 4.636 | 26.506 | 0.074 |
| 250 | 7.301 | 34.030 | 93.5 | 94.1 | 5.390 | 26.616 | -0.054 |
| 300 | 6.571 | 34.026 | 82.8 | 94.1 | 6.090 | 26.712 | -0.157 |
| 400 | 5.954 | 34.129 | 36.7 | 94.1 | 7.377 | 26.875 | -0.155 |
| 500 | 5.614 | 34.228 | 17.3 | 94.1 | 8.539 | 26.995 | -0.120 |
| 600 | 4.875 | 34.261 | 9.9 | 94.2 | 9.603 | 27.109 | -0.181 |
| 700 | 4.675 | 34.365 | 6.9 | 94.1 | 10.570 | 27.215 | -0.122 |
| 800 | 4.271 | 34.400 | 9.0 | 94.2 | 11.458 | 27.287 | -0.138 |
| 900 | 4.017 | 34.442 | 13.3 | 94.2 | 12.289 | 27.347 | -0.133 |
| 1000 | 3.788 | 34.466 | 18.4 | 94.2 | 13.076 | 27.391 | -0.137 |
| 1011 | 3.762 | 34.469 | 18.9 | 94.2 | 13.160 | 27.395 | -0.137 |

Station: 13 Date: 10/26/2005, 2104 Lat.: 35° 52.61 N Long.: 124° 01.49 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 2 | 16.486 | 33.214 | 254.7 | 89.5 | 0.073 | 24.263 | 1.056 |
| 10 | 16.367 | 33.213 | 252.9 | 90.2 | 0.364 | 24.290 | 1.028 |
| 20 | 15.943 | 33.214 | 257.0 | 90.4 | 0.722 | 24.388 | 0.928 |
| 30 | 15.865 | 33.208 | 257.0 | 90.7 | 1.075 | 24.401 | 0.906 |
| 50 | 11.521 | 33.162 | 221.4 | 93.1 | 1.711 | 25.252 | -0.044 |
| 75 | 10.102 | 33.500 | 168.2 | 93.8 | 2.323 | 25.765 | -0.032 |
| 100 | 8.970 | 33.708 | 147.0 | 94.0 | 2.835 | 26.113 | -0.055 |
| 125 | 8.863 | 33.861 | 118.1 | 94.0 | 3.293 | 26.250 | 0.049 |
| 150 | 8.575 | 33.945 | 110.7 | 94.0 | 3.724 | 26.361 | 0.069 |
| 200 | 8.090 | 34.030 | 96.0 | 94.0 | 4.531 | 26.502 | 0.062 |
| 250 | 7.259 | 34.035 | 92.2 | 94.1 | 5.281 | 26.626 | -0.055 |
| 300 | 6.828 | 34.090 | 61.0 | 94.2 | 5.979 | 26.729 | -0.071 |
| 400 | 5.979 | 34.130 | 36.6 | 94.1 | 7.267 | 26.872 | -0.151 |
| 500 | 5.319 | 34.187 | 20.4 | 94.2 | 8.429 | 26.998 | -0.188 |
| 600 | 4.943 | 34.260 | 10.1 | 94.2 | 9.493 | 27.101 | -0.174 |
| 700 | 4.553 | 34.335 | 6.5 | 94.2 | 10.466 | 27.204 | -0.159 |
| 800 | 4.327 | 34.391 | 8.0 | 94.2 | 11.364 | 27.274 | -0.139 |
| 900 | 4.033 | 34.433 | 12.1 | 94.2 | 12.199 | 27.339 | -0.138 |
| 1000 | 3.788 | 34.465 | 16.8 | 94.2 | 12.988 | 27.390 | -0.137 |
| 1012 | 3.763 | 34.469 | 17.4 | 94.2 | 13.080 | 27.396 | -0.137 |

Station: 14 Date: 10/26/2005, 2255 Lat.: 35° 47.59 N Long.: 124° 12.09 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.662 | 33.252 | 249.2 | 90.9 | 0.073 | 24.252 | 1.128 |
| 10 | 16.599 | 33.253 | 253.5 | 90.8 | 0.366 | 24.267 | 1.113 |
| 20 | 16.610 | 33.304 | 252.9 | 90.1 | 0.728 | 24.304 | 1.156 |
| 30 | 16.539 | 33.333 | 247.3 | 90.6 | 1.089 | 24.343 | 1.161 |
| 50 | 11.198 | 33.129 | 218.3 | 92.9 | 1.721 | 25.284 | -0.132 |
| 75 | 9.928 | 33.475 | 168.1 | 93.7 | 2.323 | 25.775 | -0.082 |
| 100 | 9.125 | 33.715 | 140.7 | 94.0 | 2.835 | 26.094 | -0.025 |
| 125 | 8.939 | 33.903 | 110.4 | 94.1 | 3.297 | 26.271 | 0.094 |
| 150 | 8.489 | 33.943 | 115.1 | 94.0 | 3.725 | 26.372 | 0.054 |
| 200 | 7.970 | 34.035 | 97.7 | 94.0 | 4.522 | 26.523 | 0.048 |
| 250 | 7.335 | 34.033 | 92.6 | 94.1 | 5.270 | 26.614 | -0.046 |
| 300 | 6.965 | 34.085 | 62.6 | 94.2 | 5.978 | 26.707 | -0.057 |
| 400 | 6.080 | 34.135 | 37.0 | 94.2 | 7.282 | 26.864 | -0.135 |
| 500 | 5.610 | 34.216 | 18.6 | 94.1 | 8.457 | 26.987 | -0.130 |
| 600 | 4.920 | 34.263 | 9.7 | 94.1 | 9.524 | 27.106 | -0.174 |
| 700 | 4.638 | 34.344 | 6.9 | 94.2 | 10.499 | 27.202 | -0.142 |
| 800 | 4.329 | 34.395 | 8.4 | 94.2 | 11.400 | 27.277 | -0.136 |
| 900 | 4.052 | 34.445 | 13.4 | 94.2 | 12.237 | 27.347 | -0.126 |
| 1000 | 3.854 | 34.479 | 19.1 | 94.2 | 13.023 | 27.394 | -0.120 |
| 1013 | 3.820 | 34.482 | 19.8 | 94.2 | 13.123 | 27.400 | -0.121 |

Station: 15 Date: 10/27/2005, 0126 Lat.: 35° 42.58 N Long.: 124° 22.75 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.859 | 33.347 | 249.5 | 89.9 | 0.073 | 24.279 | 1.250 |
| 10 | 16.856 | 33.347 | 251.1 | 89.8 | 0.364 | 24.280 | 1.249 |
| 20 | 16.729 | 33.354 | 252.1 | 89.5 | 0.725 | 24.315 | 1.223 |
| 30 | 16.624 | 33.372 | 249.7 | 89.3 | 1.085 | 24.354 | 1.212 |
| 50 | 14.155 | 33.308 | 227.3 | 92.2 | 1.785 | 24.849 | 0.603 |
| 75 | 10.002 | 33.546 | 159.2 | 93.7 | 2.394 | 25.818 | -0.012 |
| 100 | 9.160 | 33.701 | 139.3 | 94.0 | 2.904 | 26.077 | -0.031 |
| 125 | 8.776 | 33.859 | 120.7 | 94.0 | 3.370 | 26.262 | 0.033 |
| 150 | 8.536 | 33.960 | 110.0 | 94.0 | 3.799 | 26.378 | 0.075 |
| 200 | 8.089 | 34.061 | 88.5 | 94.1 | 4.596 | 26.526 | 0.086 |
| 250 | 7.375 | 34.074 | 75.5 | 94.2 | 5.333 | 26.641 | -0.008 |
| 300 | 6.704 | 34.058 | 68.2 | 94.2 | 6.032 | 26.721 | -0.113 |
| 400 | 5.918 | 34.111 | 42.8 | 94.1 | 7.321 | 26.865 | -0.174 |
| 500 | 5.305 | 34.168 | 23.2 | 94.2 | 8.490 | 26.985 | -0.204 |
| 600 | 5.045 | 34.273 | 9.9 | 94.1 | 9.561 | 27.100 | -0.152 |
| 700 | 4.761 | 34.337 | 7.0 | 94.2 | 10.548 | 27.183 | -0.134 |
| 800 | 4.527 | 34.389 | 8.1 | 94.2 | 11.469 | 27.251 | -0.120 |
| 900 | 4.271 | 34.435 | 11.7 | 94.2 | 12.336 | 27.316 | -0.112 |
| 1000 | 3.966 | 34.477 | 18.3 | 94.2 | 13.147 | 27.381 | -0.111 |
| 1011 | 3.918 | 34.481 | 19.2 | 94.2 | 13.232 | 27.389 | -0.112 |

Station: 16 Date: 10/27/2005, 0326 Lat.: 35° 37.59 N Long.: 124° 33.27 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.779 | 33.325 | 249.7 | 88.9 | 0.073 | 24.281 | 1.213 |
| 10 | 16.776 | 33.325 | 252.1 | 89.0 | 0.363 | 24.282 | 1.213 |
| 20 | 16.603 | 33.296 | 252.4 | 89.3 | 0.726 | 24.300 | 1.148 |
| 30 | 16.449 | 33.287 | 250.4 | 89.5 | 1.088 | 24.329 | 1.104 |
| 50 | 15.732 | 33.272 | 216.4 | 91.5 | 1.803 | 24.480 | 0.924 |
| 75 | 10.041 | 33.463 | 171.4 | 93.4 | 2.436 | 25.746 | -0.072 |
| 100 | 9.196 | 33.667 | 143.5 | 93.9 | 2.960 | 26.045 | -0.051 |
| 125 | 8.786 | 33.829 | 133.0 | 94.0 | 3.427 | 26.237 | 0.011 |
| 150 | 8.486 | 33.920 | 129.6 | 94.1 | 3.862 | 26.355 | 0.036 |
| 200 | 8.151 | 34.056 | 86.0 | 94.1 | 4.667 | 26.513 | 0.092 |
| 250 | 7.676 | 34.087 | 72.3 | 94.1 | 5.419 | 26.608 | 0.045 |
| 300 | 7.198 | 34.113 | 58.2 | 94.2 | 6.131 | 26.697 | -0.002 |
| 400 | 6.032 | 34.102 | 44.5 | 94.2 | 7.447 | 26.843 | -0.167 |
| 500 | 5.562 | 34.207 | 21.0 | 94.1 | 8.637 | 26.985 | -0.143 |
| 600 | 5.177 | 34.278 | 9.9 | 94.1 | 9.713 | 27.088 | -0.134 |
| 700 | 4.710 | 34.333 | 6.9 | 94.1 | 10.702 | 27.185 | -0.143 |
| 800 | 4.436 | 34.392 | 8.0 | 94.2 | 11.618 | 27.263 | -0.128 |
| 900 | 4.102 | 34.434 | 12.0 | 94.2 | 12.466 | 27.332 | -0.130 |
| 1000 | 3.792 | 34.468 | 17.3 | 94.2 | 13.260 | 27.391 | -0.135 |
| 1012 | 3.755 | 34.472 | 18.6 | 94.2 | 13.352 | 27.398 | -0.136 |

Station: 17 Date: 10/27/2005, 0557 Lat.: 35° 32.57 N Long.: 124° 43.92 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.639 | 33.252 | 248.8 | 90.8 | 0.073 | 24.257 | 1.123 |
| 10 | 16.638 | 33.252 | 253.3 | 90.8 | 0.366 | 24.258 | 1.122 |
| 20 | 16.275 | 33.248 | 256.4 | 91.1 | 0.728 | 24.339 | 1.033 |
| 30 | 15.592 | 33.231 | 255.6 | 90.4 | 1.078 | 24.480 | 0.861 |
| 50 | 11.427 | 33.235 | 214.0 | 92.8 | 1.704 | 25.326 | -0.004 |
| 75 | 9.637 | 33.590 | 154.6 | 93.8 | 2.287 | 25.913 | -0.039 |
| 100 | 9.180 | 33.757 | 126.4 | 94.0 | 2.785 | 26.118 | 0.018 |
| 125 | 8.704 | 33.853 | 138.2 | 94.1 | 3.242 | 26.269 | 0.017 |
| 150 | 8.481 | 33.919 | 130.1 | 94.0 | 3.673 | 26.355 | 0.034 |
| 200 | 8.189 | 34.079 | 79.4 | 94.1 | 4.473 | 26.525 | 0.116 |
| 250 | 7.582 | 34.092 | 68.3 | 94.2 | 5.217 | 26.625 | 0.036 |
| 300 | 7.026 | 34.109 | 55.7 | 94.2 | 5.920 | 26.717 | -0.029 |
| 400 | 6.091 | 34.152 | 34.4 | 94.1 | 7.215 | 26.876 | -0.120 |
| 500 | 5.421 | 34.212 | 18.0 | 94.1 | 8.376 | 27.006 | -0.156 |
| 600 | 4.987 | 34.284 | 9.1 | 94.1 | 9.433 | 27.114 | -0.150 |
| 700 | 4.685 | 34.360 | 6.8 | 94.1 | 10.402 | 27.210 | -0.125 |
| 800 | 4.356 | 34.407 | 8.9 | 94.1 | 11.294 | 27.283 | -0.124 |
| 900 | 4.051 | 34.438 | 12.5 | 94.1 | 12.128 | 27.341 | -0.132 |
| 1000 | 3.746 | 34.468 | 17.4 | 94.2 | 12.914 | 27.396 | -0.140 |
| 1011 | 3.709 | 34.469 | 18.0 | 94.2 | 12.997 | 27.401 | -0.142 |

Station: 18 Date: 10/27/2005, 0758 Lat.: 35° 27.59 N Long.: 124° 54.35 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.442 | 33.079 | 260.8 | 89.7 | 0.075 | 24.170 | 0.940 |
| 10 | 16.444 | 33.078 | 259.8 | 89.7 | 0.374 | 24.169 | 0.939 |
| 20 | 16.226 | 33.106 | 262.7 | 89.8 | 0.745 | 24.241 | 0.910 |
| 30 | 15.801 | 33.173 | 259.8 | 90.4 | 1.103 | 24.388 | 0.863 |
| 50 | 12.684 | 32.960 | 253.8 | 92.6 | 1.774 | 24.876 | 0.021 |
| 75 | 10.826 | 33.125 | 216.9 | 93.6 | 2.478 | 25.348 | -0.203 |
| 100 | 9.534 | 33.559 | 158.9 | 93.8 | 3.061 | 25.906 | -0.082 |
| 125 | 8.896 | 33.796 | 136.8 | 93.9 | 3.552 | 26.194 | 0.002 |
| 150 | 8.705 | 33.883 | 122.6 | 93.9 | 3.999 | 26.293 | 0.041 |
| 200 | 8.168 | 34.045 | 87.9 | 93.9 | 4.818 | 26.502 | 0.086 |
| 250 | 7.380 | 34.064 | 79.2 | 94.1 | 5.566 | 26.632 | -0.015 |
| 300 | 6.631 | 34.066 | 64.9 | 94.1 | 6.259 | 26.736 | -0.117 |
| 400 | 5.776 | 34.111 | 39.8 | 94.1 | 7.528 | 26.883 | -0.192 |
| 500 | 5.228 | 34.180 | 21.2 | 94.1 | 8.682 | 27.004 | -0.204 |
| 600 | 4.766 | 34.257 | 11.3 | 94.1 | 9.735 | 27.118 | -0.196 |
| 700 | 4.402 | 34.324 | 7.2 | 94.2 | 10.696 | 27.212 | -0.184 |
| 800 | 4.238 | 34.384 | 7.5 | 94.2 | 11.587 | 27.278 | -0.154 |
| 900 | 3.961 | 34.430 | 11.4 | 94.2 | 12.421 | 27.344 | -0.147 |
| 1000 | 3.702 | 34.463 | 16.5 | 94.2 | 13.203 | 27.397 | -0.147 |
| 1100 | 3.469 | 34.492 | 20.7 | 94.2 | 13.942 | 27.443 | -0.148 |
| 1200 | 3.240 | 34.514 | 25.6 | 94.2 | 14.643 | 27.483 | -0.152 |
| 1300 | 3.054 | 34.527 | 29.6 | 94.2 | 15.314 | 27.511 | -0.160 |
| 1400 | 2.903 | 34.546 | 35.4 | 94.2 | 15.960 | 27.540 | -0.159 |
| 1500 | 2.704 | 34.560 | 38.6 | 94.2 | 16.579 | 27.570 | -0.165 |
| 1750 | 2.264 | 34.587 | 50.9 | 94.2 | 18.016 | 27.630 | -0.181 |
| 2000 | 2.007 | 34.612 | 66.4 | 94.3 | 19.332 | 27.671 | -0.183 |
| 2500 | 1.747 | 34.646 | 89.1 | 94.3 | 21.757 | 27.721 | -0.179 |
| 3000 | 1.616 | 34.664 | 108.7 | 94.3 | 24.058 | 27.748 | -0.177 |
| 3500 | 1.524 | 34.678 | 125.8 | 94.3 | 26.318 | 27.769 | -0.175 |
| 4000 | 1.491 | 34.687 | 141.9 | 94.3 | 28.550 | 27.782 | -0.174 |
| 4325 | 1.510 | 34.686 | 144.9 | 94.3 | 30.035 | 27.783 | -0.176 |

Station: 19 Date: 10/27/2005, 1508 Lat.: 35° 27.51 N Long.: 124° 54.41 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|-------|----------------|----------------|
| 0 | 16.297 | 33.166 | 254.0 | 90.2 | 0.073 | 24.270 | 0.974 |
| 10 | 16.303 | 33.166 | 255.6 | 90.3 | 0.365 | 24.269 | 0.975 |
| 20 | 16.027 | 33.145 | 259.5 | 90.3 | 0.727 | 24.316 | 0.894 |
| 30 | 15.569 | 33.147 | 260.1 | 90.4 | 1.081 | 24.420 | 0.789 |
| 50 | 12.654 | 32.986 | 250.8 | 92.6 | 1.742 | 24.902 | 0.036 |
| 75 | 10.433 | 33.213 | 205.2 | 93.6 | 2.431 | 25.485 | -0.203 |
| 100 | 9.682 | 33.461 | 171.5 | 93.7 | 3.020 | 25.805 | -0.135 |
| 125 | 9.103 | 33.696 | 149.5 | 93.8 | 3.531 | 26.083 | -0.044 |
| 150 | 8.825 | 33.829 | 131.5 | 93.9 | 4.001 | 26.231 | 0.016 |
| 200 | 8.389 | 34.021 | 88.6 | 93.9 | 4.846 | 26.450 | 0.100 |
| 203 | 8.278 | 34.020 | 93.3 | 93.9 | 4.894 | 26.466 | 0.082 |

Station: 20 Date: 10/27/2005, 1728 Lat.: 35° 42.34 N Long.: 125° 05.41 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.555 | 33.243 | 254.3 | 90.0 | 0.073 | 24.269 | 1.095 |
| 10 | 16.554 | 33.243 | 253.7 | 90.0 | 0.365 | 24.270 | 1.095 |
| 20 | 16.479 | 33.234 | 255.4 | 90.0 | 0.729 | 24.281 | 1.070 |
| 30 | 16.224 | 33.231 | 253.4 | 90.0 | 1.091 | 24.337 | 1.007 |
| 50 | 11.444 | 33.226 | 215.8 | 92.3 | 1.738 | 25.315 | -0.008 |
| 75 | 9.627 | 33.438 | 175.4 | 93.5 | 2.339 | 25.795 | -0.163 |
| 100 | 9.101 | 33.697 | 143.0 | 93.8 | 2.851 | 26.083 | -0.043 |
| 125 | 8.803 | 33.828 | 130.8 | 93.9 | 3.318 | 26.234 | 0.013 |
| 150 | 8.632 | 33.921 | 115.3 | 93.9 | 3.756 | 26.333 | 0.059 |
| 200 | 8.149 | 34.042 | 96.6 | 94.0 | 4.568 | 26.502 | 0.080 |
| 250 | 7.789 | 34.092 | 74.2 | 94.1 | 5.324 | 26.595 | 0.066 |
| 300 | 6.851 | 34.061 | 72.5 | 94.1 | 6.035 | 26.703 | -0.091 |
| 400 | 6.113 | 34.126 | 42.2 | 94.0 | 7.343 | 26.852 | -0.138 |
| 500 | 5.642 | 34.251 | 14.4 | 94.1 | 8.517 | 27.010 | -0.099 |
| 600 | 5.011 | 34.295 | 8.1 | 94.1 | 9.569 | 27.121 | -0.139 |
| 700 | 4.562 | 34.351 | 6.7 | 94.1 | 10.530 | 27.216 | -0.145 |
| 800 | 4.291 | 34.405 | 8.6 | 94.1 | 11.415 | 27.288 | -0.133 |
| 900 | 3.994 | 34.443 | 12.8 | 94.1 | 12.242 | 27.350 | -0.134 |
| 1000 | 3.705 | 34.470 | 15.6 | 94.1 | 13.020 | 27.402 | -0.142 |
| 1025 | 3.653 | 34.475 | 15.5 | 94.1 | 13.208 | 27.411 | -0.143 |

Station: 21 Date: 10/27/2005, 2043 Lat.: 36° 00.52 N Long.: 125° 19.05 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.515 | 33.240 | 254.1 | 89.7 | 0.073 | 24.277 | 1.084 |
| 10 | 16.436 | 33.238 | 253.6 | 89.7 | 0.363 | 24.294 | 1.063 |
| 20 | 16.375 | 33.236 | 254.7 | 89.7 | 0.725 | 24.307 | 1.047 |
| 30 | 15.811 | 33.207 | 251.1 | 89.6 | 1.082 | 24.412 | 0.892 |
| 50 | 12.854 | 33.180 | 234.8 | 92.2 | 1.749 | 25.013 | 0.230 |
| 75 | 10.322 | 33.396 | 185.5 | 93.4 | 2.401 | 25.646 | -0.077 |
| 100 | 9.495 | 33.678 | 144.5 | 93.8 | 2.949 | 26.005 | 0.006 |
| 125 | 9.069 | 33.816 | 130.8 | 94.0 | 3.430 | 26.182 | 0.045 |
| 150 | 8.851 | 33.970 | 106.5 | 93.9 | 3.871 | 26.338 | 0.132 |
| 200 | 8.249 | 34.060 | 78.7 | 94.0 | 4.679 | 26.502 | 0.110 |
| 250 | 7.641 | 34.094 | 68.0 | 94.1 | 5.428 | 26.618 | 0.046 |
| 300 | 7.118 | 34.104 | 58.7 | 94.2 | 6.138 | 26.700 | -0.021 |
| 400 | 6.271 | 34.173 | 30.1 | 94.1 | 7.437 | 26.869 | -0.080 |
| 500 | 5.365 | 34.192 | 20.3 | 94.1 | 8.600 | 26.997 | -0.178 |
| 600 | 5.075 | 34.279 | 9.2 | 94.1 | 9.668 | 27.100 | -0.144 |
| 700 | 4.648 | 34.323 | 6.6 | 94.1 | 10.651 | 27.184 | -0.158 |
| 800 | 4.306 | 34.379 | 7.2 | 94.1 | 11.561 | 27.266 | -0.151 |
| 900 | 4.010 | 34.416 | 8.3 | 94.1 | 12.409 | 27.328 | -0.153 |
| 1000 | 3.752 | 34.448 | 12.0 | 94.1 | 13.208 | 27.380 | -0.154 |
| 1013 | 3.699 | 34.451 | 12.6 | 94.1 | 13.308 | 27.387 | -0.157 |

Station: 22 Date: 10/27/2005, 2356 Lat.: 36° 18.77 N Long.: 125° 32.54 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.430 | 33.228 | 258.3 | 90.3 | 0.073 | 24.287 | 1.055 |
| 10 | 16.432 | 33.228 | 255.6 | 90.3 | 0.363 | 24.287 | 1.054 |
| 20 | 16.423 | 33.228 | 254.7 | 90.3 | 0.726 | 24.289 | 1.052 |
| 30 | 15.960 | 33.219 | 255.9 | 89.9 | 1.086 | 24.388 | 0.936 |
| 50 | 14.668 | 33.278 | 256.4 | 92.3 | 1.773 | 24.717 | 0.690 |
| 75 | 10.639 | 33.277 | 202.3 | 93.4 | 2.470 | 25.499 | -0.115 |
| 100 | 9.798 | 33.522 | 163.0 | 93.8 | 3.051 | 25.833 | -0.067 |
| 125 | 9.289 | 33.792 | 133.0 | 93.9 | 3.554 | 26.128 | 0.062 |
| 150 | 8.852 | 33.875 | 117.0 | 93.9 | 4.013 | 26.263 | 0.057 |
| 200 | 8.424 | 34.041 | 83.6 | 94.0 | 4.847 | 26.460 | 0.122 |
| 250 | 7.831 | 34.072 | 75.6 | 94.1 | 5.619 | 26.574 | 0.056 |
| 300 | 7.266 | 34.098 | 63.8 | 94.2 | 6.343 | 26.676 | -0.005 |
| 400 | 6.136 | 34.096 | 49.1 | 94.1 | 7.676 | 26.826 | -0.158 |
| 500 | 5.649 | 34.208 | 20.6 | 94.1 | 8.880 | 26.976 | -0.132 |
| 600 | 4.719 | 34.210 | 13.8 | 94.1 | 9.965 | 27.086 | -0.239 |
| 700 | 4.491 | 34.295 | 7.3 | 94.1 | 10.955 | 27.179 | -0.197 |
| 800 | 4.320 | 34.368 | 6.0 | 94.1 | 11.875 | 27.257 | -0.158 |
| 900 | 4.057 | 34.417 | 8.2 | 94.1 | 12.732 | 27.323 | -0.148 |
| 1000 | 3.777 | 34.452 | 12.1 | 94.1 | 13.535 | 27.380 | -0.149 |
| 1011 | 3.751 | 34.454 | 12.1 | 94.1 | 13.620 | 27.385 | -0.150 |

Station: 23 Date: 10/28/2005, 0308 Lat.: 36° 36.86 N Long.: 125° 46.27 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.037 | 33.242 | 257.1 | 88.7 | 0.071 | 24.387 | 0.973 |
| 10 | 16.038 | 33.240 | 261.0 | 88.9 | 0.353 | 24.386 | 0.971 |
| 20 | 16.035 | 33.242 | 261.2 | 89.0 | 0.707 | 24.388 | 0.972 |
| 30 | 15.619 | 33.196 | 262.1 | 89.4 | 1.059 | 24.447 | 0.839 |
| 50 | 13.031 | 32.987 | 255.6 | 91.9 | 1.728 | 24.829 | 0.112 |
| 75 | 10.663 | 33.115 | 221.5 | 93.4 | 2.436 | 25.369 | -0.241 |
| 100 | 9.640 | 33.404 | 181.9 | 93.7 | 3.037 | 25.767 | -0.188 |
| 125 | 9.078 | 33.651 | 153.6 | 93.9 | 3.558 | 26.052 | -0.083 |
| 150 | 8.948 | 33.853 | 114.7 | 93.9 | 4.027 | 26.231 | 0.056 |
| 200 | 8.185 | 33.974 | 105.6 | 93.9 | 4.880 | 26.444 | 0.032 |
| 250 | 7.632 | 34.047 | 88.8 | 94.0 | 5.654 | 26.582 | 0.007 |
| 300 | 7.043 | 34.076 | 67.9 | 94.1 | 6.375 | 26.689 | -0.054 |
| 400 | 5.971 | 34.116 | 41.7 | 94.0 | 7.688 | 26.862 | -0.164 |
| 500 | 5.399 | 34.185 | 22.3 | 94.1 | 8.866 | 26.988 | -0.179 |
| 600 | 4.948 | 34.248 | 11.4 | 94.1 | 9.944 | 27.090 | -0.183 |
| 700 | 4.603 | 34.319 | 6.1 | 94.1 | 10.927 | 27.186 | -0.166 |
| 800 | 4.247 | 34.384 | 6.2 | 94.1 | 11.834 | 27.276 | -0.154 |
| 900 | 4.033 | 34.432 | 10.1 | 94.1 | 12.671 | 27.338 | -0.138 |
| 1000 | 3.683 | 34.455 | 12.6 | 94.1 | 13.458 | 27.392 | -0.156 |
| 1100 | 3.459 | 34.492 | 18.7 | 94.1 | 14.200 | 27.444 | -0.149 |
| 1200 | 3.249 | 34.516 | 24.7 | 94.1 | 14.900 | 27.483 | -0.150 |
| 1300 | 3.009 | 34.526 | 28.9 | 94.1 | 15.570 | 27.515 | -0.164 |
| 1400 | 2.805 | 34.540 | 32.7 | 94.2 | 16.209 | 27.544 | -0.171 |
| 1500 | 2.657 | 34.554 | 37.0 | 94.2 | 16.824 | 27.569 | -0.174 |
| 1750 | 2.255 | 34.586 | 51.5 | 94.2 | 18.258 | 27.629 | -0.183 |
| 2000 | 1.998 | 34.610 | 63.8 | 94.2 | 19.573 | 27.670 | -0.185 |
| 2500 | 1.736 | 34.645 | 88.0 | 94.2 | 22.005 | 27.721 | -0.180 |
| 3000 | 1.603 | 34.666 | 108.4 | 94.3 | 24.302 | 27.750 | -0.176 |
| 3500 | 1.514 | 34.678 | 126.5 | 94.3 | 26.547 | 27.770 | -0.176 |
| 4000 | 1.488 | 34.687 | 139.3 | 94.3 | 28.773 | 27.782 | -0.174 |
| 4343 | 1.512 | 34.688 | 145.4 | 94.3 | 30.330 | 27.785 | -0.174 |

Station: 24 Date: 10/28/2005, 0856 Lat.: 36° 47.04 N Long.: 125° 25.00 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 16.030 | 33.231 | 256.5 | 89.7 | 0.071 | 24.381 | 0.963 |
| 10 | 16.034 | 33.231 | 258.2 | 89.8 | 0.354 | 24.380 | 0.963 |
| 20 | 16.039 | 33.234 | 257.0 | 91.0 | 0.708 | 24.381 | 0.967 |
| 30 | 15.773 | 33.269 | 258.4 | 90.4 | 1.060 | 24.468 | 0.932 |
| 50 | 14.421 | 33.219 | 251.0 | 92.2 | 1.732 | 24.725 | 0.590 |
| 75 | 10.436 | 33.223 | 206.0 | 93.5 | 2.443 | 25.492 | -0.195 |
| 100 | 9.292 | 33.632 | 152.4 | 93.8 | 3.001 | 26.002 | -0.064 |
| 125 | 9.089 | 33.775 | 128.3 | 93.8 | 3.489 | 26.147 | 0.016 |
| 150 | 8.861 | 33.950 | 98.3 | 93.9 | 3.939 | 26.321 | 0.119 |
| 200 | 8.172 | 34.004 | 104.0 | 93.9 | 4.764 | 26.469 | 0.054 |
| 250 | 7.528 | 34.054 | 84.4 | 94.0 | 5.528 | 26.603 | -0.002 |
| 300 | 7.085 | 34.079 | 68.3 | 94.0 | 6.245 | 26.686 | -0.045 |
| 400 | 6.159 | 34.110 | 46.5 | 94.0 | 7.569 | 26.834 | -0.145 |
| 500 | 5.370 | 34.154 | 26.7 | 94.0 | 8.762 | 26.966 | -0.207 |
| 600 | 4.936 | 34.241 | 11.0 | 94.1 | 9.846 | 27.086 | -0.190 |
| 700 | 4.566 | 34.313 | 6.9 | 94.1 | 10.839 | 27.185 | -0.175 |
| 800 | 4.260 | 34.375 | 6.4 | 94.1 | 11.747 | 27.268 | -0.159 |
| 900 | 4.008 | 34.413 | 8.6 | 94.1 | 12.596 | 27.325 | -0.156 |
| 1000 | 3.810 | 34.447 | 11.9 | 94.1 | 13.401 | 27.373 | -0.150 |
| 1010 | 3.785 | 34.450 | 12.1 | 94.1 | 13.480 | 27.378 | -0.150 |

Station: 25 Date: 10/28/2005, 1340 Lat.: 36° 56.89 N Long.: 125° 03.10 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 15.018 | 33.112 | 262.8 | 91.2 | 0.068 | 24.513 | 0.638 |
| 10 | 14.990 | 33.129 | 264.8 | 91.6 | 0.341 | 24.532 | 0.645 |
| 20 | 14.815 | 33.162 | 265.4 | 91.7 | 0.678 | 24.596 | 0.632 |
| 30 | 14.125 | 33.264 | 267.2 | 91.7 | 1.000 | 24.820 | 0.562 |
| 50 | 13.590 | 33.269 | 258.0 | 91.9 | 1.612 | 24.935 | 0.452 |
| 75 | 10.350 | 33.341 | 189.0 | 93.0 | 2.291 | 25.599 | -0.116 |
| 100 | 9.167 | 33.547 | 165.0 | 93.4 | 2.843 | 25.956 | -0.151 |
| 125 | 9.091 | 33.775 | 128.1 | 93.5 | 3.332 | 26.147 | 0.017 |
| 150 | 8.890 | 33.942 | 99.0 | 93.6 | 3.781 | 26.309 | 0.117 |
| 200 | 8.284 | 34.053 | 82.8 | 93.7 | 4.604 | 26.491 | 0.109 |
| 250 | 7.650 | 34.084 | 74.7 | 93.8 | 5.359 | 26.609 | 0.039 |
| 300 | 7.079 | 34.099 | 63.9 | 93.9 | 6.068 | 26.702 | -0.030 |
| 400 | 6.255 | 34.144 | 38.6 | 93.8 | 7.386 | 26.848 | -0.106 |
| 500 | 5.543 | 34.218 | 18.1 | 93.8 | 8.566 | 26.996 | -0.137 |
| 600 | 5.209 | 34.281 | 9.7 | 93.8 | 9.644 | 27.086 | -0.128 |
| 700 | 4.723 | 34.337 | 6.8 | 93.8 | 10.639 | 27.187 | -0.139 |
| 800 | 4.416 | 34.388 | 7.8 | 93.8 | 11.552 | 27.262 | -0.133 |
| 900 | 4.115 | 34.426 | 10.0 | 93.8 | 12.408 | 27.325 | -0.135 |
| 1000 | 3.892 | 34.458 | 13.8 | 93.8 | 13.212 | 27.373 | -0.133 |
| 1012 | 3.868 | 34.461 | 14.0 | 93.8 | 13.306 | 27.379 | -0.133 |

Station: 26 Date: 10/28/2005, 1716 Lat.: 37° 06.89 N Long.: 124° 41.57 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 15.072 | 33.246 | 274.6 | 87.9 | 0.066 | 24.605 | 0.756 |
| 10 | 15.061 | 33.266 | 273.9 | 87.9 | 0.332 | 24.623 | 0.770 |
| 20 | 14.668 | 33.260 | 273.4 | 89.8 | 0.660 | 24.703 | 0.677 |
| 30 | 13.901 | 33.257 | 268.6 | 90.5 | 0.979 | 24.862 | 0.508 |
| 50 | 11.992 | 33.443 | 239.9 | 92.6 | 1.546 | 25.383 | 0.269 |
| 75 | 10.189 | 33.596 | 152.8 | 93.2 | 2.152 | 25.825 | 0.060 |
| 100 | 9.582 | 33.841 | 107.4 | 93.4 | 2.651 | 26.118 | 0.150 |
| 125 | 9.510 | 33.976 | 84.9 | 93.4 | 3.117 | 26.236 | 0.244 |
| 150 | 9.279 | 34.052 | 75.1 | 93.5 | 3.553 | 26.333 | 0.266 |
| 200 | 8.847 | 34.158 | 59.0 | 93.7 | 4.374 | 26.486 | 0.279 |
| 250 | 8.177 | 34.151 | 61.7 | 93.8 | 5.138 | 26.585 | 0.170 |
| 300 | 7.190 | 34.080 | 65.8 | 93.8 | 5.865 | 26.672 | -0.030 |
| 400 | 6.325 | 34.144 | 39.4 | 93.8 | 7.201 | 26.839 | -0.097 |
| 500 | 5.698 | 34.190 | 24.0 | 93.9 | 8.407 | 26.955 | -0.140 |
| 600 | 5.317 | 34.283 | 10.2 | 93.8 | 9.514 | 27.075 | -0.113 |
| 700 | 4.810 | 34.306 | 7.3 | 93.9 | 10.535 | 27.153 | -0.153 |
| 800 | 4.471 | 34.354 | 6.5 | 93.9 | 11.482 | 27.229 | -0.154 |
| 900 | 4.243 | 34.410 | 7.6 | 93.9 | 12.369 | 27.299 | -0.134 |
| 1000 | 4.003 | 34.443 | 10.6 | 93.9 | 13.203 | 27.350 | -0.134 |
| 1011 | 3.967 | 34.446 | 11.6 | 93.9 | 13.292 | 27.356 | -0.135 |

Station: 27 Date: 10/28/2005, 2111 Lat.: 37° 16.92 N Long.: 124° 20.16 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 14.872 | 33.178 | 265.4 | 89.9 | 0.067 | 24.595 | 0.658 |
| 10 | 14.745 | 33.206 | 264.4 | 89.5 | 0.332 | 24.644 | 0.652 |
| 20 | 13.961 | 33.254 | 269.0 | 90.2 | 0.654 | 24.846 | 0.519 |
| 30 | 13.139 | 33.308 | 263.5 | 90.1 | 0.953 | 25.055 | 0.390 |
| 50 | 12.742 | 33.341 | 253.6 | 91.9 | 1.524 | 25.160 | 0.335 |
| 75 | 10.058 | 33.875 | 96.4 | 93.2 | 2.102 | 26.065 | 0.258 |
| 100 | 9.714 | 33.991 | 75.5 | 93.5 | 2.567 | 26.214 | 0.291 |
| 125 | 9.608 | 34.026 | 69.3 | 93.5 | 3.015 | 26.259 | 0.300 |
| 150 | 9.487 | 34.069 | 63.2 | 93.5 | 3.453 | 26.313 | 0.314 |
| 200 | 9.181 | 34.142 | 54.4 | 93.6 | 4.295 | 26.421 | 0.321 |
| 250 | 8.824 | 34.178 | 54.6 | 93.7 | 5.095 | 26.506 | 0.291 |
| 300 | 8.444 | 34.194 | 52.7 | 93.9 | 5.862 | 26.579 | 0.244 |
| 400 | 7.232 | 34.186 | 43.2 | 93.9 | 7.292 | 26.750 | 0.058 |
| 500 | 6.363 | 34.213 | 28.4 | 94.0 | 8.583 | 26.890 | -0.038 |
| 600 | 5.617 | 34.247 | 16.0 | 93.9 | 9.757 | 27.012 | -0.106 |
| 700 | 4.937 | 34.305 | 6.9 | 93.9 | 10.805 | 27.138 | -0.140 |
| 800 | 4.511 | 34.363 | 5.8 | 93.9 | 11.757 | 27.232 | -0.142 |
| 900 | 4.274 | 34.409 | 7.1 | 93.9 | 12.643 | 27.295 | -0.132 |
| 1000 | 4.052 | 34.445 | 11.9 | 93.9 | 13.481 | 27.347 | -0.127 |
| 1012 | 3.988 | 34.446 | 11.6 | 93.9 | 13.578 | 27.354 | -0.133 |

Station: 28 Date: 10/29/2005, 0100 Lat.: 37° 26.84 N Long.: 123° 58.33 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 14.490 | 33.204 | 286.0 | 86.0 | 0.065 | 24.697 | 0.594 |
| 10 | 14.420 | 33.218 | 290.8 | 86.2 | 0.323 | 24.723 | 0.590 |
| 20 | 14.245 | 33.255 | 277.1 | 89.3 | 0.642 | 24.788 | 0.581 |
| 30 | 13.186 | 33.297 | 254.8 | 91.9 | 0.943 | 25.037 | 0.391 |
| 50 | 12.011 | 33.419 | 239.2 | 92.5 | 1.498 | 25.360 | 0.253 |
| 75 | 10.720 | 33.419 | 194.9 | 93.0 | 2.134 | 25.596 | 0.012 |
| 100 | 9.324 | 33.624 | 148.4 | 93.4 | 2.684 | 25.991 | -0.065 |
| 125 | 9.091 | 33.788 | 128.5 | 93.5 | 3.167 | 26.156 | 0.027 |
| 150 | 8.830 | 33.926 | 112.1 | 93.6 | 3.613 | 26.307 | 0.095 |
| 200 | 8.447 | 34.049 | 95.7 | 93.7 | 4.439 | 26.463 | 0.131 |
| 250 | 7.907 | 34.086 | 81.5 | 93.9 | 5.212 | 26.574 | 0.079 |
| 300 | 7.514 | 34.136 | 62.3 | 93.9 | 5.942 | 26.670 | 0.060 |
| 400 | 6.598 | 34.180 | 34.7 | 93.9 | 7.279 | 26.832 | -0.032 |
| 500 | 5.508 | 34.188 | 22.2 | 93.9 | 8.469 | 26.977 | -0.165 |
| 600 | 4.978 | 34.263 | 9.6 | 93.9 | 9.555 | 27.099 | -0.168 |
| 700 | 4.794 | 34.355 | 6.5 | 93.6 | 10.540 | 27.194 | -0.117 |
| 800 | 4.406 | 34.388 | 6.3 | 93.9 | 11.455 | 27.263 | -0.134 |
| 900 | 4.076 | 34.407 | 7.2 | 93.9 | 12.316 | 27.314 | -0.153 |
| 1000 | 3.828 | 34.454 | 13.2 | 94.0 | 13.125 | 27.377 | -0.142 |
| 1012 | 3.822 | 34.460 | 14.2 | 94.0 | 13.218 | 27.382 | -0.138 |

Station: 29 Date: 10/29/2005, 0457 Lat.: 37° 36.91 N Long.: 123° 36.55 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 14.401 | 33.205 | 270.4 | 89.2 | 0.064 | 24.716 | 0.576 |
| 10 | 14.302 | 33.278 | 268.0 | 90.0 | 0.320 | 24.794 | 0.612 |
| 20 | 13.273 | 33.314 | 251.5 | 91.6 | 0.621 | 25.033 | 0.422 |
| 30 | 11.697 | 33.316 | 209.5 | 92.6 | 0.896 | 25.338 | 0.112 |
| 50 | 10.358 | 33.469 | 181.1 | 93.3 | 1.383 | 25.697 | -0.012 |
| 75 | 9.689 | 33.587 | 157.5 | 93.5 | 1.931 | 25.902 | -0.033 |
| 100 | 9.239 | 33.768 | 135.8 | 93.5 | 2.427 | 26.117 | 0.036 |
| 125 | 8.784 | 33.903 | 115.8 | 93.7 | 2.882 | 26.295 | 0.069 |
| 150 | 8.616 | 33.999 | 95.9 | 93.8 | 3.306 | 26.397 | 0.119 |
| 200 | 8.319 | 34.111 | 74.2 | 93.8 | 4.095 | 26.531 | 0.161 |
| 250 | 7.703 | 34.110 | 69.1 | 93.9 | 4.840 | 26.622 | 0.067 |
| 300 | 7.187 | 34.138 | 54.7 | 94.0 | 5.541 | 26.718 | 0.015 |
| 400 | 6.500 | 34.172 | 35.7 | 93.9 | 6.857 | 26.838 | -0.052 |
| 500 | 5.778 | 34.203 | 22.6 | 94.0 | 8.061 | 26.956 | -0.120 |
| 600 | 5.308 | 34.261 | 13.2 | 93.7 | 9.173 | 27.059 | -0.132 |
| 700 | 5.028 | 34.337 | 8.1 | 93.7 | 10.195 | 27.153 | -0.105 |
| 800 | 4.532 | 34.377 | 7.5 | 93.8 | 11.134 | 27.241 | -0.128 |
| 900 | 4.205 | 34.415 | 8.6 | 93.6 | 12.013 | 27.307 | -0.134 |
| 1000 | 3.892 | 34.446 | 11.6 | 93.6 | 12.831 | 27.364 | -0.142 |
| 1013 | 3.853 | 34.450 | 12.0 | 93.6 | 12.934 | 27.371 | -0.143 |

Station: 30 Date: 10/29/2005, 0738 Lat.: 37° 42.07 N Long.: 123° 25.89 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|--------|----------------|----------------|
| 0 | 14.122 | 33.227 | 276.4 | 87.7 | 0.063 | 24.792 | 0.533 |
| 10 | 14.127 | 33.243 | 278.0 | 88.2 | 0.314 | 24.804 | 0.546 |
| 20 | 13.264 | 33.279 | 255.3 | 91.3 | 0.622 | 25.008 | 0.393 |
| 30 | 12.682 | 33.355 | 246.7 | 92.4 | 0.909 | 25.182 | 0.335 |
| 50 | 11.299 | 33.405 | 210.5 | 93.0 | 1.427 | 25.481 | 0.107 |
| 75 | 9.840 | 33.585 | 154.3 | 93.4 | 1.997 | 25.875 | -0.009 |
| 100 | 9.300 | 33.770 | 132.7 | 93.6 | 2.499 | 26.109 | 0.048 |
| 125 | 9.146 | 33.954 | 108.2 | 93.6 | 2.953 | 26.278 | 0.168 |
| 150 | 8.831 | 33.988 | 107.9 | 93.6 | 3.383 | 26.355 | 0.143 |
| 200 | 8.487 | 34.078 | 87.3 | 93.8 | 4.194 | 26.479 | 0.160 |
| 250 | 8.010 | 34.075 | 83.5 | 93.9 | 4.967 | 26.550 | 0.085 |
| 300 | 7.415 | 34.102 | 67.7 | 94.0 | 5.707 | 26.658 | 0.019 |
| 400 | 6.649 | 34.158 | 40.4 | 93.9 | 7.058 | 26.808 | -0.043 |
| 500 | 5.852 | 34.230 | 19.8 | 94.0 | 8.276 | 26.968 | -0.090 |
| 600 | 5.353 | 34.278 | 11.3 | 93.9 | 9.385 | 27.067 | -0.113 |
| 700 | 4.938 | 34.332 | 7.4 | 93.8 | 10.400 | 27.159 | -0.119 |
| 800 | 4.494 | 34.375 | 6.4 | 93.8 | 11.341 | 27.243 | -0.135 |
| 900 | 4.162 | 34.416 | 8.4 | 93.9 | 12.213 | 27.312 | -0.138 |
| 1000 | 3.828 | 34.450 | 12.2 | 93.7 | 13.022 | 27.374 | -0.146 |
| 1012 | 3.786 | 34.455 | 12.3 | 93.7 | 13.116 | 27.382 | -0.146 |

Station: 31 Date: 10/29/2005, 1030 Lat.: 37° 46.97 N Long.: 123° 15.04 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|-------|----------------|----------------|
| 0 | 14.326 | 33.242 | 265.4 | 89.5 | 0.064 | 24.761 | 0.589 |
| 10 | 14.128 | 33.263 | 260.9 | 89.7 | 0.316 | 24.819 | 0.563 |
| 20 | 12.480 | 33.378 | 249.8 | 90.8 | 0.610 | 25.238 | 0.313 |
| 30 | 11.873 | 33.449 | 237.6 | 91.8 | 0.872 | 25.410 | 0.251 |
| 50 | 10.505 | 33.506 | 179.9 | 93.2 | 1.363 | 25.700 | 0.044 |
| 75 | 9.715 | 33.730 | 131.8 | 91.4 | 1.894 | 26.009 | 0.085 |
| 100 | 9.642 | 33.748 | 123.3 | 89.4 | 2.391 | 26.036 | 0.086 |
| 125 | 9.623 | 33.760 | 121.7 | 89.0 | 2.886 | 26.049 | 0.092 |
| 126 | 9.622 | 33.761 | 121.5 | 89.1 | 2.906 | 26.050 | 0.093 |

Station: 32 Date: 10/29/2005, 1233 Lat.: 37° 51.87 N Long.: 123° 03.81 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|-------|----------------|----------------|
| 0 | 12.854 | 33.252 | 288.7 | 80.8 | 0.058 | 25.067 | 0.288 |
| 10 | 12.214 | 33.437 | 271.1 | 88.7 | 0.278 | 25.335 | 0.308 |
| 20 | 11.155 | 33.484 | 221.1 | 92.5 | 0.528 | 25.568 | 0.144 |
| 30 | 10.985 | 33.557 | 209.3 | 92.8 | 0.765 | 25.656 | 0.171 |
| 50 | 10.143 | 33.648 | 149.5 | 92.4 | 1.209 | 25.873 | 0.093 |
| 75 | 9.853 | 33.715 | 116.9 | 85.4 | 1.728 | 25.975 | 0.096 |
| 86 | 9.821 | 33.730 | 101.5 | 76.0 | 1.951 | 25.992 | 0.103 |

Station: 33 Date: 10/29/2005, 1411 Lat.: 37° 56.86 N Long.: 122° 52.94 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|-------|----------------|----------------|
| 0 | 12.639 | 33.195 | 287.1 | 82.1 | 0.058 | 25.065 | 0.200 |
| 10 | 12.517 | 33.353 | 285.9 | 85.8 | 0.284 | 25.212 | 0.301 |
| 20 | 12.445 | 33.440 | 289.6 | 88.1 | 0.557 | 25.293 | 0.356 |
| 30 | 11.094 | 33.590 | 211.6 | 92.6 | 0.807 | 25.661 | 0.217 |
| 46 | 10.101 | 33.641 | 115.7 | 63.8 | 1.153 | 25.874 | 0.080 |

Station: 34 Date: 10/29/2005, 2307 Lat.: 37° 15.50 N Long.: 122° 37.73 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|-------|----------------|----------------|
| 0 | 12.954 | 33.387 | 306.8 | 77.3 | 0.056 | 25.153 | 0.416 |
| 10 | 12.632 | 33.388 | 265.0 | 86.6 | 0.278 | 25.217 | 0.352 |
| 20 | 12.504 | 33.399 | 253.1 | 88.8 | 0.550 | 25.250 | 0.335 |
| 30 | 11.764 | 33.468 | 215.9 | 91.2 | 0.818 | 25.444 | 0.245 |
| 50 | 10.971 | 33.551 | 162.5 | 91.7 | 1.292 | 25.653 | 0.163 |
| 75 | 9.838 | 33.744 | 101.4 | 86.9 | 1.820 | 26.000 | 0.116 |
| 92 | 9.802 | 33.755 | 94.0 | 75.9 | 2.161 | 26.015 | 0.119 |

Station: 35 Date: 10/30/2005, 0145 Lat.: 36° 57.32 N Long.: 122° 24.91 W

| P(dbar) | T(°C) | S | O ₂ (μm/kg) | Xmiss(%) | ΔΦ | σ _θ | π _θ |
|---------|--------|--------|------------------------|----------|-------|----------------|----------------|
| 0 | 13.135 | 33.350 | 313.2 | 82.3 | 0.057 | 25.088 | 0.424 |
| 10 | 12.877 | 33.360 | 272.1 | 82.6 | 0.285 | 25.147 | 0.379 |
| 20 | 11.467 | 33.469 | 228.6 | 92.6 | 0.542 | 25.499 | 0.190 |
| 30 | 10.716 | 33.504 | 189.7 | 92.9 | 0.780 | 25.661 | 0.080 |
| 50 | 9.934 | 33.679 | 139.2 | 92.8 | 1.218 | 25.933 | 0.082 |
| 75 | 9.874 | 33.766 | 121.4 | 89.7 | 1.724 | 26.011 | 0.140 |
| 100 | 9.851 | 33.793 | 116.4 | 90.2 | 2.222 | 26.037 | 0.158 |
| 125 | 9.787 | 33.847 | 109.5 | 90.9 | 2.713 | 26.090 | 0.189 |
| 150 | 9.609 | 33.880 | 106.9 | 92.6 | 3.194 | 26.145 | 0.184 |
| 200 | 9.087 | 33.964 | 96.4 | 92.2 | 4.109 | 26.296 | 0.165 |
| 250 | 8.633 | 34.056 | 83.1 | 92.2 | 4.950 | 26.440 | 0.164 |
| 273 | 8.378 | 34.084 | 77.5 | 92.1 | 5.319 | 26.502 | 0.147 |

Table 3: *Results of nutrient and primary productivity analyses of water samples collected at hydrographic stations during the PaCOOS cruise of October 2005. Stations are in chronological (and numerical) order. The time listed (<Mon. dd, yyyy hh:mm>) for each station is the beginning of the CTD cast. 12 Niskin bottles were tripped at each station, although some bottles sampled duplicate pressures. Except where primary productivity analyses were not performed (see Introduction), the data for each station are separated into two sections ("Physical and Chemical" and "Biological").*

The physical oceanographic properties listed in the first seven columns of the "Physical and Chemical" section of each station's data are the uncorrected values measured by the CTD at the times each Niskin bottle was tripped. Because they are uncorrected, these values may differ slightly from those listed in Table 2. The last four columns of this section give the nitrate (NO₃), nitrite (NO₂), phosphate (PO₄), and dissolved silicate (SiO₄) concentrations.

The "Biological" section of each station's data gives the results of the primary productivity analyses. As stated above, primary productivity sampling was not undertaken at every hydrographic station.

Date: Oct 25, 2005 16:49 Cruise: S405 Latitude: 36.795 Year: 2005
 Project: CALCOFI Station: C1 Longitude: -121.846 Work week: 44
 Platform: RV POINT SUR Cast: 1 Secchi Depth: --- Day of Year: 298

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.1 | 12 | 12.789 | 33.341 | 25.149 | 72 | 2.713 | 0.199 | 0.844 | 9.782 |
| 5 | 5.0 | 11 | 12.733 | 33.358 | 25.174 | 87 | 5.137 | 0.231 | 0.825 | 10.476 |
| 10 | 10.3 | 10 | 12.311 | 33.394 | 25.283 | 91 | 8.049 | 0.253 | 0.874 | 11.562 |
| 20 | 20.1 | 9 | 11.824 | 33.438 | 25.409 | 92 | 11.772 | 0.293 | 1.088 | 13.675 |
| 30 | 30.9 | 8 | 10.932 | 33.439 | 25.573 | 93 | 18.425 | 0.360 | 1.621 | 18.737 |
| 40 | 40.4 | 7 | 10.468 | 33.620 | 25.796 | 87 | 21.085 | 0.436 | 2.082 | 23.180 |
| 60 | 60.4 | 6 | 10.260 | 33.668 | 25.869 | 84 | 22.534 | 0.441 | 2.421 | 24.695 |
| 80 | 80.6 | 5 | 10.109 | 33.695 | 25.916 | 83 | 23.874 | 0.280 | 2.025 | 26.994 |
| 100 | 101.1 | 4 | 9.842 | 33.725 | 25.985 | 89 | 24.560 | 0.178 | 2.146 | 27.232 |
| 150 | 150.4 | 3 | 9.503 | 33.803 | 26.103 | 88 | 27.141 | 0.213 | 2.495 | 34.707 |
| 200 | 201.5 | 2 | 8.108 | 34.029 | 26.498 | 84 | 32.115 | 0.138 | 2.607 | 51.707 |
| 275 | 277.2 | 1 | 7.557 | 34.099 | 26.635 | 83 | 33.865 | 0.109 | 2.711 | 58.725 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 8.648 | 0.925 | 0 | 100 | 142.506 | 16.478 | 0 |
| 5 | 11 | 1.372 | 0.464 | 0 | 50 | 254.831 | 29.467 | 3 |
| 10 | 10 | 0.761 | 0.396 | 5 | 30 | 35.119 | 25.590 | 5 |
| 20 | 9 | 0.451 | 0.445 | 5 | 15 | 26.865 | 19.575 | 9 |
| 30 | 8 | 0.263 | 0.555 | 10 | 5 | 7.083 | 9.302 | 18 |
| 40 | 7 | 0.254 | 0.808 | 10 | 1 | 1.813 | 2.381 | 32 |
| 60 | 6 | 0.216 | 0.741 | 20 | 0.1 | 0.078 | 0.172 | 51 |
| 80 | 5 | 0.165 | 0.562 | | | | | |
| 100 | 4 | 0.106 | 0.392 | | | | | |
| 150 | 3 | 0.082 | 0.267 | | | | | |
| 200 | 2 | 0.050 | 0.300 | | | | | |
| 275 | 1 | 0.041 | 0.320 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 59.96 | mg m-2 day -1 | Carbon Fixation: | 1185.9 | mg m-2 day-1 |
| Phaeophytin: | 15.39 | mg m-2 day -1 | Productivity Index: | 19.78 | mg C mg Chl day-1 |
| Mixed Layer | 21 | meters | PBOpt: | 29.47 | mg C mg Chl day-1 |

Date: Oct 25, 2005 18:45 Cruise: S405 Latitude: 36.736 Year: 2005
 Project: CALCOFI Station: H3 Longitude: -122.020 Work week: 44
 Platform: RV POINT SUR Cast: 2 Secchi Depth: --- Day of Year: 298

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.6 | 12 | 13.020 | 33.358 | 25.117 | 78 | 2.475 | 0.275 | 0.712 | 9.237 |
| 5 | 4.9 | 11 | 12.709 | 33.378 | 25.194 | 87 | 3.200 | 0.218 | 0.679 | 9.208 |
| 10 | 9.9 | 10 | 12.560 | 33.378 | 25.223 | 91 | 4.650 | 0.256 | 0.695 | 9.224 |
| 20 | 20.8 | 9 | 12.299 | 33.365 | 25.263 | 92 | 7.828 | 0.282 | 0.941 | 10.519 |
| 30 | 29.7 | 8 | 11.913 | 33.384 | 25.351 | 93 | 10.811 | 0.325 | 1.162 | 12.700 |
| 40 | 40.4 | 7 | 10.822 | 33.385 | 25.550 | 93 | 19.114 | 0.306 | 1.578 | 16.920 |
| 60 | 60.1 | 6 | 10.324 | 33.511 | 25.736 | 93 | 21.563 | 0.256 | 2.085 | 20.349 |
| 80 | 80.3 | 5 | 10.006 | 33.642 | 25.893 | 93 | 22.106 | 0.133 | 1.897 | 22.597 |
| 100 | 100.9 | 4 | 10.029 | 33.797 | 26.010 | 93 | 24.346 | 0.092 | 2.067 | 26.497 |
| 150 | 151.7 | 3 | 9.926 | 33.879 | 26.092 | 93 | 25.895 | 0.157 | 2.286 | 28.835 |
| 200 | 201.2 | 2 | 9.523 | 33.937 | 26.205 | 93 | 27.111 | 0.078 | 2.265 | 30.668 |
| 1000 | 1010.3 | 1 | 3.865 | 34.436 | 27.359 | 84 | 44.154 | 0.144 | 3.486 | 125.71 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 11.280 | 0.904 | 0 | 100 | 314.056 | 27.842 | 0 |
| 5 | 11 | 4.277 | 0.553 | 5 | 50 | 145.884 | 34.109 | 2 |
| 10 | 10 | 0.724 | 0.321 | 10 | 30 | 26.201 | 36.199 | 4 |
| 20 | 9 | 0.339 | 0.286 | 10 | 15 | 18.461 | 25.506 | 7 |
| 30 | 8 | 0.360 | 0.377 | 20 | 5 | 4.526 | 13.338 | 15 |
| 40 | 7 | 0.288 | 0.377 | 30 | 1 | 1.177 | 3.269 | 30 |
| 60 | 6 | 0.154 | 0.321 | 40 | 0.1 | 0.133 | 0.461 | 53 |
| 80 | 5 | 0.083 | 0.251 | | | | | |
| 100 | 4 | 0.061 | 0.218 | | | | | |
| 150 | 3 | 0.025 | 0.148 | | | | | |
| 200 | 2 | 0.012 | 0.123 | | | | | |
| 1000 | 1 | 0.024 | 0.290 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 33.62 | mg m-2 day -1 | Carbon Fixation: | 871.28 | mg m-2 day-1 |
| Phaeophytin: | 10.74 | mg m-2 day -1 | Productivity Index: | 25.91 | mg C mg Chl day-1 |
| Mixed Layer | 840 | meters | PBOpt: | 36.2 | mg C mg Chl day-1 |

Date: Oct 25, 2005 21:32 Cruise: S405 Latitude: 36.711 Year: 2005
 Project: CALCOFI Station: NPS1 Longitude: -122.241 Work week: 44
 Platform: RV POINT SUR Cast: 3 Secchi Depth: --- Day of Year: 298

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.0 | 12 | 14.030 | 33.221 | 24.806 | 56 | 2.013 | 0.198 | 1.328 | 6.326 |
| 50 | 49.8 | 11 | 10.792 | 33.472 | 25.623 | 93 | 17.291 | 0.270 | 1.427 | 16.298 |
| 100 | 100.4 | 10 | 9.507 | 33.860 | 26.146 | 94 | 25.934 | 0.100 | 2.001 | 28.488 |
| 200 | 201.3 | 9 | 8.879 | 34.057 | 26.402 | 94 | 29.681 | 0.070 | 2.136 | 37.417 |
| 300 | 302.9 | 8 | 7.656 | 34.068 | 26.597 | 94 | 33.367 | 0.063 | 2.334 | 47.984 |
| 400 | 404.6 | 7 | 6.579 | 34.082 | 26.757 | 94 | 33.291 | 0.061 | 2.548 | 57.192 |
| 500 | 504.3 | 6 | 5.748 | 34.178 | 26.940 | 94 | 40.552 | 0.073 | 3.111 | 78.810 |
| 600 | 605.7 | 5 | 5.311 | 34.279 | 27.073 | 94 | 41.916 | 0.050 | 3.158 | 92.615 |
| 700 | 705.5 | 4 | 4.942 | 34.334 | 27.160 | 94 | 43.305 | 0.079 | 3.225 | 101.22 |
| 800 | 806.3 | 3 | 4.472 | 34.378 | 27.248 | 94 | 43.466 | 0.054 | 3.277 | 110.10 |
| 900 | 908.1 | 2 | 4.125 | 34.411 | 27.312 | 94 | 44.020 | 0.058 | 3.344 | 117.65 |
| 1000 | 1010.6 | 1 | 3.927 | 34.433 | 27.351 | 93 | 39.867 | 0.065 | 3.070 | 112.45 |

Date: Oct 25, 2005 23:37 Cruise: S405 Latitude: 36.627 Year: 2005
 Project: CALCOFI Station: 67-55 Longitude: -122.419 Work week: 44
 Platform: RV POINT SUR Cast: 4 Secchi Depth: --- Day of Year: 298

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.1 | 12 | 12.382 | 33.397 | 25.271 | 88 | 5.354 | 0.206 | 0.664 | 10.875 |
| 5 | 5.0 | 11 | 12.101 | 33.424 | 25.346 | 88 | 6.827 | 0.244 | 1.007 | 11.571 |
| 10 | 10.3 | 10 | 11.784 | 33.502 | 25.467 | 89 | 10.028 | 0.270 | 1.062 | 15.147 |
| 20 | 20.0 | 9 | 11.503 | 33.514 | 25.528 | 90 | 10.011 | 0.246 | 1.028 | 13.261 |
| 30 | 30.1 | 8 | 11.484 | 33.539 | 25.551 | 90 | 10.949 | 0.264 | 1.009 | 15.229 |
| 40 | 39.9 | 7 | 11.387 | 33.541 | 25.571 | 91 | 14.008 | 0.272 | 1.203 | 16.204 |
| 60 | 61.9 | 6 | 10.765 | 33.557 | 25.695 | 92 | 18.538 | 0.265 | 1.489 | 18.678 |
| 80 | 82.1 | 5 | 10.255 | 33.570 | 25.794 | 93 | 21.921 | 0.170 | 1.884 | 20.798 |
| 100 | 100.9 | 4 | 9.836 | 33.610 | 25.896 | 93 | 23.101 | 0.082 | 1.870 | 22.382 |
| 150 | 151.2 | 3 | 9.206 | 33.830 | 26.172 | 94 | 26.584 | 0.074 | 2.067 | 28.853 |
| 200 | 201.2 | 2 | 8.990 | 34.000 | 26.340 | 94 | 29.599 | 0.058 | 2.359 | 34.357 |
| 1000 | 1011.0 | 1 | 3.921 | 34.432 | 27.350 | 94 | 43.857 | 0.012 | 3.530 | 119.32 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 3.807 | 0.536 | 0 | 100 | 119.979 | 31.515 | 0 |
| 5 | 11 | 3.168 | 0.705 | 5 | 50 | 102.287 | 32.290 | 3 |
| 10 | 10 | 1.927 | 0.658 | 5 | 30 | 127.677 | 40.305 | 5 |
| 20 | 9 | 1.692 | 0.788 | 10 | 15 | 34.806 | 18.062 | 9 |
| 30 | 8 | 1.824 | 0.944 | 20 | 5 | 19.941 | 11.785 | 15 |
| 40 | 7 | 0.912 | 0.724 | 20 | 1 | 3.526 | 2.084 | 24 |
| 60 | 6 | 0.592 | 0.792 | 40 | 0.1 | 0.424 | 0.465 | 37 |
| 80 | 5 | 0.199 | 0.574 | | | | | |
| 100 | 4 | 0.083 | 0.403 | | | | | |
| 150 | 3 | 0.022 | 0.194 | | | | | |
| 200 | 2 | 0.036 | 0.159 | | | | | |
| 1000 | 1 | 0.012 | 0.050 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 53.06 | mg m-2 day -1 | Carbon Fixation: | 1214.8 | mg m-2 day-1 |
| Phaeophytin: | 17.29 | mg m-2 day -1 | Productivity Index: | 22.90 | mg C mg Chl day-1 |
| Mixed Layer | 423 | meters | PBOpt: | 40.3 | mg C mg Chl day-1 |

Date: Oct 26, 2005 02:18 Cruise: S405 Latitude: 36.543 Year: 2005
 Project: CALCOFI Station: NPS#2 Longitude: -122.599 Work week: 44
 Platform: RV POINT SUR Cast: 5 Secchi Depth: --- Day of Year: 299

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.1 | 12 | 13.348 | 33.360 | 25.053 | 71 | 2.347 | 0.135 | 0.784 | 8.897 |
| 50 | 51.1 | 11 | 11.163 | 33.523 | 25.597 | 92 | 24.025 | 0.065 | 1.785 | 23.787 |
| 100 | 100.9 | 10 | 9.801 | 33.684 | 25.960 | 93 | 23.815 | 0.076 | 1.925 | 23.831 |
| 200 | 202.0 | 9 | 9.169 | 33.997 | 26.309 | 94 | 27.201 | 0.047 | 2.068 | 31.561 |
| 300 | 302.9 | 8 | 7.953 | 34.087 | 26.568 | 94 | 32.750 | 0.045 | 2.500 | 45.298 |
| 400 | 403.5 | 7 | 6.725 | 34.110 | 26.760 | 94 | 37.356 | 0.015 | 2.909 | 61.499 |
| 500 | 503.6 | 6 | 5.910 | 34.195 | 26.933 | 94 | 39.911 | 0.049 | 3.228 | 75.120 |
| 600 | 604.5 | 5 | 5.368 | 34.261 | 27.052 | 94 | 42.232 | 0.033 | 3.390 | 87.918 |
| 700 | 705.5 | 4 | 4.809 | 34.309 | 27.156 | 94 | 43.592 | 0.017 | 3.464 | 99.184 |
| 800 | 807.9 | 3 | 4.467 | 34.376 | 27.247 | 94 | 43.998 | 0.010 | 3.499 | 107.89 |
| 900 | 909.2 | 2 | 4.152 | 34.405 | 27.304 | 94 | 43.220 | 0.021 | 3.460 | 112.65 |
| 1000 | 1010.3 | 1 | 3.854 | 34.425 | 27.351 | 94 | 44.297 | 0.021 | 3.518 | 120.93 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 26, 2005 04:23 | Cruise: | S405 | Latitude: | 36.458 | Year: | 2005 |
| Project: | CALCOFI | Station: | 67-60 | Longitude: | -122.777 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 6 | Secchi Depth: | --- | Day of Year: | 299 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.8 | 12 | 14.162 | 33.248 | 24.800 | 85 | 2.961 | 0.245 | 0.529 | 4.627 |
| 5 | 4.7 | 11 | 13.873 | 33.249 | 24.861 | 85 | 4.598 | 0.287 | 0.768 | 5.495 |
| 10 | 10.5 | 10 | 13.295 | 33.268 | 24.993 | 91 | 6.352 | 0.341 | 0.695 | 6.980 |
| 20 | 20.1 | 9 | 12.124 | 33.341 | 25.278 | 92 | 12.053 | 0.352 | 1.008 | 12.202 |
| 30 | 30.4 | 8 | 11.199 | 33.379 | 25.478 | 93 | --- | --- | --- | --- |
| 40 | 40.5 | 7 | 10.491 | 33.462 | 25.668 | 93 | 20.384 | 0.078 | 1.618 | 18.117 |
| 60 | 60.6 | 6 | 10.157 | 33.607 | 25.839 | 93 | 22.494 | 0.033 | 1.734 | 21.598 |
| 80 | 80.4 | 5 | 9.903 | 33.684 | 25.943 | 94 | 24.055 | 0.027 | 1.848 | 24.296 |
| 100 | 102.0 | 4 | 9.753 | 33.783 | 26.045 | 93 | 25.514 | 0.046 | 2.087 | 26.962 |
| 150 | 151.2 | 3 | 9.647 | 33.991 | 26.226 | 94 | 28.695 | 0.059 | 2.500 | 32.536 |
| 200 | 202.0 | 2 | 9.003 | 34.037 | 26.367 | 94 | 29.389 | 0.064 | 2.491 | 35.525 |
| 1000 | 1010.8 | 1 | 3.837 | 34.426 | 27.354 | 94 | 43.504 | 0.037 | 3.400 | 119.04 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 5.678 | 0.989 | 0 | 100 | 272.575 | 48.009 | 0 |
| 5 | 11 | 2.811 | 0.688 | 5 | 50 | 160.660 | 57.162 | 3 |
| 10 | 10 | 0.902 | 0.394 | 5 | 30 | 127.150 | 45.239 | 5 |
| 20 | 9 | 0.479 | 0.417 | 10 | 15 | 40.632 | 45.026 | 9 |
| 40 | 7 | 0.191 | 0.260 | 20 | 5 | 5.936 | 12.382 | 17 |
| 60 | 6 | 0.121 | 0.203 | 20 | 1 | 1.739 | 3.628 | 32 |
| 80 | 5 | 0.060 | 0.175 | 40 | 0.1 | 0.038 | 0.197 | 59 |
| 100 | 4 | 0.034 | 0.146 | | | | | |
| 150 | 3 | 0.025 | 0.107 | | | | | |
| 200 | 2 | 0.020 | 0.074 | | | | | |
| 1000 | 1 | 0.006 | 0.025 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 38.29 | mg m-2 day -1 | Carbon Fixation: | 1501.9 | mg m-2 day-1 |
| Phaeophytin: | 15.62 | mg m-2 day -1 | Productivity Index: | 39.22 | mg C mg Chl day-1 |
| Mixed Layer | 4 | meters | PBOpt: | 57.16 | mg C mg Chl day-1 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 26, 2005 06:52 | Cruise: | S405 | Latitude: | 36.378 | Year: | 2005 |
| Project: | CALCOFI | Station: | NPS-3 | Longitude: | -122.957 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 7 | Secchi Depth: | --- | Day of Year: | 299 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.4 | 12 | 14.602 | 33.196 | 24.667 | 88 | 4.335 | 0.145 | 0.543 | 8.995 |
| 50 | 51.9 | 11 | 10.641 | 33.489 | 25.664 | 93 | 20.434 | 0.148 | 1.554 | 19.605 |
| 100 | 100.3 | 10 | 9.634 | 33.785 | 26.066 | 93 | 25.626 | 0.046 | 1.836 | 27.283 |
| 200 | 201.4 | 9 | 8.937 | 34.057 | 26.393 | 94 | 29.609 | 0.022 | 2.161 | 36.132 |
| 300 | 301.7 | 8 | 8.206 | 34.158 | 26.587 | 94 | 32.837 | 0.026 | 2.459 | 45.912 |
| 400 | 402.4 | 7 | 6.893 | 34.113 | 26.739 | 94 | 36.615 | 0.024 | 2.631 | 58.556 |
| 500 | 504.4 | 6 | 5.987 | 34.141 | 26.881 | 94 | 39.586 | 0.011 | 2.859 | 72.370 |
| 600 | 605.6 | 5 | 5.634 | 34.226 | 26.993 | 94 | 38.253 | 0.018 | 2.849 | 78.027 |
| 700 | 707.3 | 4 | 5.129 | 34.297 | 27.110 | 94 | 40.728 | 0.066 | 2.863 | 85.611 |
| 800 | 807.7 | 3 | 4.732 | 34.358 | 27.204 | 94 | 43.936 | 0.008 | 3.291 | 104.05 |
| 900 | 908.5 | 2 | 4.357 | 34.399 | 27.278 | 94 | 44.025 | 0.004 | 3.257 | 110.34 |
| 1000 | 1010.2 | 1 | 3.945 | 34.429 | 27.346 | 94 | 44.419 | 0.014 | 3.225 | 114.78 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 26, 2005 08:51 | Cruise: | S405 | Latitude: | 36.292 | Year: | 2005 |
| Project: | CALCOFI | Station: | 67-65 | Longitude: | -123.133 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 8 | Secchi Depth: | --- | Day of Year: | 299 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.8 | 12 | 15.717 | 33.203 | 24.429 | 90 | 0.633 | 0.056 | 0.183 | 2.270 |
| 5 | 5.0 | 11 | 15.723 | 33.202 | 24.427 | 90 | 0.359 | 0.053 | 0.177 | 2.483 |
| 10 | 9.9 | 10 | 15.433 | 33.215 | 24.502 | 88 | 0.423 | 0.077 | 0.386 | 5.528 |
| 20 | 19.9 | 9 | 13.544 | 33.308 | 24.974 | 89 | 3.574 | 0.169 | 0.468 | 8.929 |
| 30 | 31.0 | 8 | 12.076 | 33.410 | 25.341 | 92 | 8.932 | 0.243 | 0.816 | 11.768 |
| 40 | 40.3 | 7 | 11.462 | 33.449 | 25.486 | 93 | 14.189 | 0.219 | 1.211 | 14.466 |
| 60 | 60.9 | 6 | 10.379 | 33.533 | 25.743 | 93 | 21.755 | 0.044 | 1.564 | 20.130 |
| 80 | 79.6 | 5 | 9.894 | 33.666 | 25.930 | 93 | 24.803 | 0.081 | 1.694 | 24.346 |
| 100 | 101.1 | 4 | 9.470 | 33.808 | 26.111 | 94 | 27.054 | 0.062 | 2.026 | 29.109 |
| 150 | 150.0 | 3 | 9.028 | 34.014 | 26.344 | 94 | 26.597 | 0.021 | 1.994 | 31.967 |
| 200 | 200.4 | 2 | 8.508 | 34.073 | 26.472 | 94 | 30.393 | 0.025 | 2.194 | 39.088 |
| 1000 | 1009.8 | 1 | 3.920 | 34.431 | 27.349 | 94 | --- | --- | --- | --- |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 1.156 | 0.297 | 0 | 100 | 45.696 | 39.523 | 0 |
| 5 | 11 | 1.222 | 0.327 | 5 | 50 | 71.565 | 58.564 | 5 |
| 10 | 10 | 6.683 | 1.053 | 5 | 30 | 64.560 | 52.832 | 8 |
| 20 | 9 | 1.260 | 0.577 | 10 | 15 | 170.482 | 25.508 | 12 |
| 30 | 8 | 0.712 | 0.144 | 20 | 5 | 11.730 | 9.313 | 16 |
| 40 | 7 | 0.367 | 0.591 | 20 | 1 | 3.061 | 2.430 | 23 |
| 60 | 6 | 0.119 | 0.481 | 40 | 0.1 | 0.263 | 0.717 | 37 |
| 80 | 5 | 0.062 | 0.313 | | | | | |
| 100 | 4 | 0.027 | 0.239 | | | | | |
| 150 | 3 | 0.014 | 0.110 | | | | | |
| 200 | 2 | 0.010 | 0.099 | | | | | |
| 1000 | 1 | 0.003 | 0.024 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 79.25 | mg m-2 day -1 | Carbon Fixation: | 1407.6 | mg m-2 day-1 |
| Phaeophytin: | 15.34 | mg m-2 day -1 | Productivity Index: | 17.76 | mg C mg Chl day-1 |
| Mixed Layer | 13 | meters | PBOpt: | 58.56 | mg C mg Chl day-1 |

| | | | | | | | |
|-----------|--------------------|----------|------|---------------|----------|--------------|------|
| Date: | Oct 26, 2005 11:10 | Cruise: | S405 | Latitude: | 36.210 | Year: | 2005 |
| Project: | CALCOFI | Station: | NPS4 | Longitude: | -123.313 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 9 | Secchi Depth: | --- | Day of Year: | 299 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.5 | 12 | 16.008 | 33.193 | 24.356 | 90 | 0.146 | 0.104 | 0.464 | 2.290 |
| 50 | 50.1 | 11 | 11.187 | 33.049 | 25.224 | 93 | 12.709 | 0.078 | 1.066 | 10.816 |
| 100 | 100.9 | 10 | 9.097 | 33.592 | 26.002 | 94 | 24.161 | 0.081 | 1.820 | 24.089 |
| 200 | 203.4 | 9 | 8.258 | 34.052 | 26.494 | 94 | 31.361 | 0.178 | 2.492 | 40.844 |
| 300 | 302.9 | 8 | 7.271 | 34.109 | 26.683 | 94 | 35.443 | 0.034 | 2.720 | 54.674 |
| 400 | 403.5 | 7 | 6.421 | 34.164 | 26.843 | 94 | 38.462 | 0.041 | 3.231 | 68.076 |
| 500 | 503.8 | 6 | 5.637 | 34.218 | 26.985 | 94 | 40.939 | 0.035 | 3.184 | 83.059 |
| 600 | 605.1 | 5 | 5.149 | 34.266 | 27.082 | 94 | 42.709 | 0.008 | 3.244 | 92.266 |
| 700 | 705.9 | 4 | 4.769 | 34.313 | 27.163 | 94 | 43.579 | 0.027 | 3.447 | 101.82 |
| 800 | 805.4 | 3 | 4.533 | 34.383 | 27.246 | 94 | 43.712 | 0.024 | 3.439 | 108.23 |
| 900 | 907.9 | 2 | 4.203 | 34.416 | 27.308 | 94 | 43.701 | 0.042 | 3.416 | 112.49 |
| 1000 | 1009.7 | 1 | 3.858 | 34.441 | 27.364 | 94 | 44.601 | 0.040 | 3.429 | 120.70 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 26, 2005 13:18 | Cruise: | S405 | Latitude: | 36.126 | Year: | 2005 |
| Project: | CALCOFI | Station: | 67-70 | Longitude: | -123.489 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 10 | Secchi Depth: | --- | Day of Year: | 299 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.8 | 12 | 16.173 | 33.169 | 24.300 | 91 | 0.095 | 0.049 | 0.153 | 1.942 |
| 5 | 4.6 | 11 | 16.171 | 33.168 | 24.301 | 91 | 0.161 | 0.064 | 0.288 | 1.958 |
| 10 | 10.2 | 10 | 16.165 | 33.168 | 24.302 | 91 | 0.159 | 0.079 | 0.435 | 2.078 |
| 20 | 19.8 | 9 | 16.029 | 33.167 | 24.332 | 91 | 0.080 | 0.040 | 0.280 | 1.838 |
| 30 | 30.5 | 8 | 15.984 | 33.174 | 24.348 | 91 | 0.040 | 0.037 | 0.207 | 1.789 |
| 40 | 40.3 | 7 | 15.877 | 33.175 | 24.373 | 92 | 0.285 | 0.061 | 0.249 | 1.922 |
| 60 | 59.7 | 6 | 12.556 | 33.092 | 25.003 | 93 | 9.777 | 0.410 | 0.962 | 7.484 |
| 80 | 80.9 | 5 | 10.653 | 33.313 | 25.525 | 93 | 18.971 | 0.076 | 1.523 | 15.230 |
| 100 | 99.6 | 4 | 9.633 | 33.375 | 25.746 | 94 | 21.010 | 0.041 | 1.462 | 18.749 |
| 150 | 151.4 | 3 | 8.766 | 33.831 | 26.242 | 94 | 28.274 | 0.051 | 1.975 | 30.584 |
| 200 | 202.7 | 2 | 8.025 | 33.963 | 26.459 | 94 | 30.072 | 0.045 | 1.977 | 37.234 |
| 1000 | 1009.0 | 1 | 3.857 | 34.444 | 27.366 | 94 | 45.229 | 0.025 | 3.265 | 121.28 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.474 | 0.071 | 0 | 100 | 10.705 | 22.595 | 0 |
| 5 | 11 | 0.531 | 0.082 | 5 | 50 | 13.916 | 26.203 | 7 |
| 10 | 10 | 0.385 | 0.075 | 5 | 30 | 13.234 | 24.918 | 13 |
| 20 | 9 | 0.457 | 0.121 | 10 | 15 | 13.577 | 35.228 | 20 |
| 30 | 8 | 0.447 | 0.141 | 20 | 5 | 8.358 | 18.296 | 32 |
| 40 | 7 | 0.434 | 0.164 | 20 | 1 | 1.933 | 4.231 | 49 |
| 60 | 6 | 0.327 | 0.190 | 40 | 0.1 | 0.179 | 0.412 | 75 |
| 80 | 5 | 0.150 | 0.123 | | | | | |
| 100 | 4 | 0.067 | 0.057 | | | | | |
| 150 | 3 | 0.009 | 0.027 | | | | | |
| 200 | 2 | 0.006 | 0.021 | | | | | |
| 1000 | 1 | 0.003 | 0.013 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 22.60 | mg m-2 day -1 | Carbon Fixation: | 478.81 | mg m-2 day-1 |
| Phaeophytin: | 4.77 | mg m-2 day -1 | Productivity Index: | 21.19 | mg C mg Chl day-1 |
| Mixed Layer | 395 | meters | PBOpt: | 35.23 | mg C mg Chl day-1 |

| | | | | | | | |
|-----------|--------------------|----------|------|---------------|----------|--------------|------|
| Date: | Oct 26, 2005 16:25 | Cruise: | S405 | Latitude: | 36.042 | Year: | 2005 |
| Project: | CALCOFI | Station: | NPS5 | Longitude: | -123.668 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 11 | Secchi Depth: | --- | Day of Year: | 299 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.1 | 12 | 16.039 | 33.215 | 24.366 | 91 | 0.109 | 0.055 | 0.155 | 1.758 |
| 50 | 49.6 | 11 | 12.404 | 33.012 | 24.971 | 93 | 10.384 | 0.435 | 0.888 | 7.680 |
| 100 | 101.2 | 10 | 9.325 | 33.529 | 25.916 | 94 | 22.093 | 0.030 | 1.566 | 20.731 |
| 200 | 201.1 | 9 | 8.204 | 34.025 | 26.480 | 94 | 31.384 | 0.044 | 2.220 | 39.026 |
| 300 | 302.3 | 8 | 6.984 | 34.111 | 26.725 | 94 | 36.350 | 0.032 | 2.567 | 55.368 |
| 400 | 403.0 | 7 | 6.079 | 34.166 | 26.888 | 94 | 40.029 | 0.045 | 2.962 | 70.860 |
| 500 | 505.0 | 6 | 5.300 | 34.202 | 27.013 | 94 | 43.033 | 0.056 | 3.125 | 86.138 |
| 600 | 605.9 | 5 | 4.994 | 34.298 | 27.125 | 94 | 43.860 | 0.039 | 3.316 | 93.879 |
| 700 | 706.0 | 4 | 4.700 | 34.348 | 27.198 | 94 | 44.218 | 0.045 | 3.360 | 101.74 |
| 800 | 807.9 | 3 | 4.345 | 34.405 | 27.283 | 94 | 44.869 | 0.041 | 3.367 | 110.52 |
| 900 | 908.2 | 2 | 4.090 | 34.446 | 27.343 | 94 | 45.064 | 0.025 | 3.341 | 114.59 |
| 1000 | 1009.4 | 1 | 3.774 | 34.469 | 27.394 | 94 | 45.377 | 0.026 | 3.368 | 122.68 |

Date: Oct 26, 2005 18:28 Cruise: S405 Latitude: 35.959 Year: 2005
 Project: CALCOFI Station: 67-75 Longitude: -123.847 Work week: 44
 Platform: RV POINT SUR Cast: 12 Secchi Depth: --- Day of Year: 299

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.2 | 12 | 16.276 | 33.213 | 24.311 | 90 | 0.154 | 0.076 | 0.162 | 1.990 |
| 5 | 5.7 | 11 | 16.278 | 33.213 | 24.310 | 90 | 0.016 | 0.015 | 0.221 | 1.793 |
| 10 | 9.4 | 10 | 16.232 | 33.215 | 24.323 | 90 | 0.079 | 0.046 | 0.257 | 1.781 |
| 20 | 20.2 | 9 | 15.922 | 33.228 | 24.403 | 90 | 0.066 | 0.036 | 0.162 | 1.687 |
| 30 | 31.0 | 8 | 15.790 | 33.222 | 24.429 | 91 | 0.371 | 0.065 | 0.242 | 1.842 |
| 40 | 39.4 | 7 | 15.510 | 33.190 | 24.467 | 92 | 5.173 | 0.250 | 0.513 | 4.440 |
| 60 | 60.7 | 6 | 11.385 | 33.201 | 25.307 | 93 | 15.530 | 0.140 | 1.046 | 11.654 |
| 80 | 80.4 | 5 | 10.346 | 33.436 | 25.674 | 94 | 22.106 | 0.048 | 1.488 | 18.749 |
| 100 | 101.7 | 4 | 9.198 | 33.557 | 25.959 | 94 | 22.643 | 0.090 | 1.528 | 21.844 |
| 150 | 150.1 | 3 | 8.642 | 33.893 | 26.310 | 94 | 28.999 | 0.033 | 1.929 | 32.420 |
| 200 | 201.4 | 2 | 8.103 | 34.041 | 26.508 | 94 | 31.787 | 0.045 | 2.232 | 39.942 |
| 1000 | 1011.0 | 1 | 3.762 | 34.468 | 27.395 | 94 | 45.104 | 0.027 | 3.335 | 122.23 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.434 | 0.095 | 0 | 100 | 16.589 | 38.199 | 0 |
| 5 | 11 | 0.451 | 0.097 | 5 | 50 | 19.012 | 42.136 | 7 |
| 10 | 10 | 0.485 | 0.102 | 10 | 30 | 18.769 | 38.696 | 13 |
| 20 | 9 | 0.469 | 0.097 | 20 | 15 | 19.460 | 41.487 | 20 |
| 30 | 8 | 0.431 | 0.163 | 30 | 5 | 7.422 | 17.240 | 31 |
| 40 | 7 | 0.369 | 0.202 | 40 | 1 | 1.376 | 3.725 | 49 |
| 60 | 6 | 0.199 | 0.157 | 60 | 0.1 | 0.000 | 0.000 | 80 |
| 80 | 5 | 0.081 | 0.074 | | | | | |
| 100 | 4 | 0.023 | 0.028 | | | | | |
| 150 | 3 | 0.004 | 0.023 | | | | | |
| 200 | 2 | 0.005 | 0.014 | | | | | |
| 1000 | 1 | 0.002 | 0.004 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 21.45 | mg m-2 day -1 | Carbon Fixation: | 559.65 | mg m-2 day-1 |
| Phaeophytin: | 6.67 | mg m-2 day -1 | Productivity Index: | 26.09 | mg C mg Chl day-1 |
| Mixed Layer | 444 | meters | PBOpt: | 42.14 | mg C mg Chl day-1 |

| | | | | | | | |
|-----------|--------------------|----------|------|---------------|----------|--------------|------|
| Date: | Oct 26, 2005 21:04 | Cruise: | S405 | Latitude: | 35.877 | Year: | 2005 |
| Project: | CALCOFI | Station: | NPS6 | Longitude: | -124.025 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 13 | Secchi Depth: | --- | Day of Year: | 299 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.2 | 12 | 16.472 | 33.214 | 24.267 | 90 | 0.259 | 0.079 | 0.221 | 2.212 |
| 50 | 50.5 | 11 | 10.962 | 33.236 | 25.410 | 93 | 17.241 | 0.044 | 1.360 | 13.363 |
| 100 | 102.7 | 10 | 9.055 | 33.651 | 26.055 | 94 | 25.133 | 0.034 | 1.644 | 25.181 |
| 200 | 199.8 | 9 | 8.080 | 34.038 | 26.509 | 94 | 31.792 | 0.051 | 1.974 | 40.472 |
| 300 | 301.3 | 8 | 6.818 | 34.085 | 26.727 | 94 | 36.803 | 0.039 | 2.516 | 57.432 |
| 400 | 403.3 | 7 | 5.908 | 34.129 | 26.880 | 94 | 39.504 | 0.029 | 2.977 | 71.808 |
| 500 | 503.2 | 6 | 5.271 | 34.200 | 27.014 | 94 | 42.553 | 0.036 | 3.132 | 86.274 |
| 600 | 605.9 | 5 | 4.863 | 34.272 | 27.119 | 94 | 44.104 | 0.048 | 3.317 | 97.827 |
| 700 | 705.8 | 4 | 4.546 | 34.343 | 27.212 | 94 | 44.758 | 0.017 | 3.333 | 105.80 |
| 800 | 808.1 | 3 | 4.280 | 34.404 | 27.289 | 94 | 44.762 | 0.024 | 3.389 | 113.00 |
| 900 | 909.1 | 2 | 4.016 | 34.439 | 27.345 | 94 | 45.289 | 0.033 | 3.417 | 118.19 |
| 1000 | 1009.9 | 1 | 3.771 | 34.468 | 27.394 | 94 | 45.224 | 0.068 | 3.362 | 123.52 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 26, 2005 22:55 | Cruise: | S405 | Latitude: | 35.793 | Year: | 2005 |
| Project: | CALCOFI | Station: | 67-80 | Longitude: | -124.201 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 14 | Secchi Depth: | --- | Day of Year: | 299 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.2 | 12 | 16.648 | 33.250 | 24.254 | 90 | 0.383 | 0.140 | 0.366 | 2.123 |
| 5 | 4.9 | 11 | 16.644 | 33.250 | 24.254 | 91 | --- | 0.057 | 0.315 | 1.799 |
| 10 | 9.4 | 10 | 16.590 | 33.253 | 24.270 | 90 | --- | 0.040 | 0.330 | 1.668 |
| 20 | 20.5 | 9 | 16.581 | 33.291 | 24.301 | 90 | --- | 0.022 | 0.232 | 1.544 |
| 30 | 30.9 | 8 | 16.581 | 33.330 | 24.332 | 91 | 0.265 | 0.054 | 0.291 | 1.701 |
| 40 | 40.0 | 7 | 15.506 | 33.227 | 24.496 | 92 | 7.795 | 0.212 | 0.721 | 6.636 |
| 60 | 60.3 | 6 | 10.545 | 33.281 | 25.518 | 93 | 18.856 | 0.087 | 1.203 | 15.408 |
| 80 | 81.2 | 5 | 9.657 | 33.561 | 25.887 | 94 | 24.472 | 0.038 | 1.710 | 22.481 |
| 100 | 101.4 | 4 | 9.116 | 33.704 | 26.087 | 94 | 26.255 | 0.028 | 1.888 | 26.705 |
| 150 | 149.5 | 3 | 8.514 | 33.918 | 26.349 | 94 | 29.297 | 0.062 | 2.138 | 33.491 |
| 200 | 201.9 | 2 | 8.056 | 34.030 | 26.507 | 94 | 31.488 | 0.061 | 2.301 | 39.875 |
| 1000 | 1009.9 | 1 | 3.828 | 34.480 | 27.398 | 94 | 43.917 | 0.043 | 3.261 | 120.34 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.331 | 0.041 | 0 | 100 | 17.462 | 52.774 | 0 |
| 5 | 11 | 0.306 | 0.063 | 5 | 50 | 19.958 | 65.130 | 9 |
| 10 | 10 | 0.353 | 0.076 | 10 | 30 | 12.758 | 36.193 | 15 |
| 20 | 9 | 0.412 | 0.095 | 20 | 15 | 11.377 | 27.633 | 22 |
| 30 | 8 | 0.473 | 0.142 | 30 | 5 | 9.992 | 21.134 | 34 |
| 40 | 7 | 0.314 | 0.184 | 40 | 1 | 1.748 | 5.567 | 53 |
| 60 | 6 | 0.159 | 0.133 | 60 | 0.1 | 0.016 | 0.102 | 93 |
| 80 | 5 | 0.052 | 0.048 | | | | | |
| 100 | 4 | 0.016 | 0.028 | | | | | |
| 150 | 3 | 0.004 | 0.021 | | | | | |
| 200 | 2 | 0.004 | 0.016 | | | | | |
| 1000 | 1 | 0.002 | 0.010 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 20.23 | mg m-2 day -1 | Carbon Fixation: | 587.36 | mg m-2 day-1 |
| Phaeophytin: | 5.97 | mg m-2 day -1 | Productivity Index: | 29.03 | mg C mg Chl day-1 |
| Mixed Layer | 34 | meters | PBOpt: | 65.13 | mg C mg Chl day-1 |

| | | | | | | | |
|-----------|--------------------|----------|------|---------------|----------|--------------|------|
| Date: | Oct 27, 2005 01:25 | Cruise: | S405 | Latitude: | 35.709 | Year: | 2005 |
| Project: | CALCOFI | Station: | NPS7 | Longitude: | -124.379 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 15 | Secchi Depth: | --- | Day of Year: | 300 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.0 | 12 | 16.840 | 33.347 | 24.283 | 88 | 0.254 | 0.100 | 0.469 | 1.456 |
| 50 | 49.9 | 11 | 16.520 | 33.384 | 24.388 | 92 | 0.922 | 0.064 | 0.473 | 1.928 |
| 100 | 101.1 | 10 | 9.209 | 33.667 | 26.043 | 94 | 24.903 | 0.073 | 1.884 | 24.316 |
| 200 | 202.4 | 9 | 8.074 | 34.039 | 26.511 | 94 | 30.734 | 0.067 | 2.159 | 38.904 |
| 300 | 302.7 | 8 | 6.639 | 34.072 | 26.740 | 94 | 36.795 | 0.062 | 2.780 | 57.393 |
| 400 | 403.9 | 7 | 5.889 | 34.112 | 26.869 | 94 | 40.080 | 0.029 | 2.852 | 71.012 |
| 500 | 504.8 | 6 | 5.262 | 34.182 | 27.001 | 94 | 42.183 | 0.034 | 3.123 | 84.538 |
| 600 | 605.0 | 5 | 5.049 | 34.281 | 27.105 | 94 | 44.611 | 0.218 | --- | 94.591 |
| 700 | 704.9 | 4 | 4.750 | 34.336 | 27.183 | 94 | 43.857 | 0.029 | --- | 101.44 |
| 800 | 807.0 | 3 | 4.534 | 34.397 | 27.257 | 94 | 44.623 | 0.029 | 3.345 | 106.74 |
| 900 | 909.0 | 2 | 4.245 | 34.436 | 27.319 | 94 | 44.598 | 0.034 | 3.316 | 120.87 |
| 1000 | 1009.6 | 1 | 3.919 | 34.480 | 27.389 | 94 | 44.566 | 0.067 | --- | 114.00 |

Date: Oct 27, 2005 03:26 Cruise: S405 Latitude: 35.626 Year: 2005
 Project: CALCOFI Station: 67-85 Longitude: -124.554 Work week: 44
 Platform: RV POINT SUR Cast: 16 Secchi Depth: --- Day of Year: 300

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.6 | 12 | 16.759 | 33.322 | 24.283 | 89 | 0.007 | 0.017 | 0.128 | 1.554 |
| 5 | 5.0 | 11 | 16.753 | 33.322 | 24.285 | 89 | 0.063 | 0.081 | 0.535 | 1.544 |
| 10 | 9.5 | 10 | 16.749 | 33.321 | 24.285 | 89 | 0.057 | 0.043 | 0.586 | 1.482 |
| 20 | 20.7 | 9 | 16.592 | 33.294 | 24.301 | 89 | 0.028 | 0.039 | 0.464 | 1.443 |
| 30 | 30.4 | 8 | 16.442 | 33.286 | 24.330 | 89 | 0.218 | 0.054 | 0.371 | 1.565 |
| 40 | 40.5 | 7 | 16.397 | 33.257 | 24.318 | 92 | 5.156 | 0.139 | 0.590 | 4.455 |
| 60 | 60.6 | 6 | 10.818 | 33.401 | 25.564 | 93 | 20.609 | 0.047 | 1.409 | 16.301 |
| 80 | 80.5 | 5 | 9.573 | 33.529 | 25.875 | 94 | 24.799 | 0.024 | 1.868 | 23.671 |
| 100 | 100.9 | 4 | 9.130 | 33.691 | 26.075 | 94 | 26.337 | 0.051 | 1.998 | 26.969 |
| 150 | 151.6 | 3 | 8.469 | 33.922 | 26.359 | 94 | 28.349 | 0.026 | 2.186 | 32.503 |
| 200 | 200.6 | 2 | 8.149 | 34.058 | 26.515 | 94 | 32.722 | 0.007 | 2.227 | 41.349 |
| 1000 | 1008.7 | 1 | 3.760 | 34.471 | 27.397 | 94 | 45.669 | 0.077 | 3.459 | 122.74 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.431 | 0.102 | 0 | 100 | 10.229 | 23.760 | 0 |
| 5 | 11 | 0.421 | 0.120 | 5 | 50 | 16.041 | 38.091 | 7 |
| 10 | 10 | 0.417 | 0.127 | 10 | 30 | 20.075 | 48.100 | 13 |
| 20 | 9 | 0.540 | 0.188 | 20 | 15 | 16.298 | 30.205 | 20 |
| 30 | 8 | 0.592 | 0.287 | 30 | 5 | 10.115 | 17.080 | 30 |
| 40 | 7 | 0.435 | 0.241 | 40 | 1 | 1.947 | 4.473 | 45 |
| 60 | 6 | 0.237 | 0.192 | 60 | 0.1 | 0.000 | 0.000 | 73 |
| 80 | 5 | 0.046 | 0.048 | | | | | |
| 100 | 4 | 0.014 | 0.036 | | | | | |
| 150 | 3 | 0.002 | 0.018 | | | | | |
| 200 | 2 | 0.001 | 0.015 | | | | | |
| 1000 | 1 | 0.001 | 0.010 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 22.35 | mg m-2 day -1 | Carbon Fixation: | 545.64 | mg m-2 day-1 |
| Phaeophytin: | 9.05 | mg m-2 day -1 | Productivity Index: | 24.41 | mg C mg Chl day-1 |
| Mixed Layer | 39 | meters | PBOpt: | 48.1 | mg C mg Chl day-1 |

Date: Oct 27, 2005 05:56 Cruise: S405 Latitude: 35.543 Year: 2005
 Project: CALCOFI Station: NPS-8 Longitude: -124.732 Work week: 44
 Platform: RV POINT SUR Cast: 17 Secchi Depth: --- Day of Year: 300

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.9 | 12 | 16.619 | 33.249 | 24.259 | 91 | --- | --- | --- | --- |
| 50 | 50.4 | 11 | 11.002 | 33.250 | 25.413 | 93 | 20.720 | 0.096 | 1.476 | 16.724 |
| 100 | 101.1 | 10 | 9.056 | 33.772 | 26.149 | 94 | 27.479 | 0.023 | 2.018 | 28.097 |
| 200 | 200.9 | 9 | 8.069 | 34.081 | 26.545 | 94 | 33.302 | 0.032 | 2.455 | 42.675 |
| 300 | 301.5 | 8 | 6.952 | 34.117 | 26.733 | 94 | 31.898 | 0.024 | 2.407 | 48.278 |
| 400 | 403.4 | 7 | 5.934 | 34.143 | 26.888 | 94 | 40.924 | 0.015 | 3.043 | 73.035 |
| 500 | 503.3 | 6 | 5.383 | 34.210 | 27.009 | 94 | 40.516 | 0.011 | 3.042 | 80.678 |
| 600 | 604.6 | 5 | 5.001 | 34.296 | 27.123 | 94 | 43.704 | 0.014 | 3.204 | 93.184 |
| 700 | 706.3 | 4 | 4.663 | 34.364 | 27.215 | 94 | 40.047 | 0.000 | 3.127 | 94.195 |
| 800 | 807.6 | 3 | 4.328 | 34.409 | 27.288 | 94 | 44.602 | 0.021 | 3.461 | 108.97 |
| 900 | 908.4 | 2 | 4.029 | 34.444 | 27.348 | 94 | 41.287 | 0.021 | 3.160 | 109.04 |
| 1000 | 1009.7 | 1 | 3.716 | 34.469 | 27.400 | 94 | 44.425 | 0.063 | 3.353 | 121.43 |

Date: Oct 27, 2005 07:58 Cruise: S405 Latitude: 35.460 Year: 2005
 Project: CALCOFI Station: 67-90 Longitude: -124.906 Work week: 44
 Platform: RV POINT SUR Cast: 18 Secchi Depth: --- Day of Year: 300

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.7 | 12 | 16.291 | 33.069 | 24.197 | 90 | 0.484 | 0.068 | 0.215 | 1.973 |
| 400 | 403.3 | 11 | 5.861 | 34.119 | 26.878 | 94 | 35.062 | 0.008 | 2.524 | 62.386 |
| 600 | 605.2 | 10 | 4.748 | 34.268 | 27.129 | 94 | 37.589 | 0.013 | 2.843 | 82.806 |
| 800 | 807.3 | 9 | 4.137 | 34.388 | 27.291 | 94 | 44.935 | 0.014 | 3.292 | 113.38 |
| 1000 | 1009.4 | 8 | 3.705 | 34.469 | 27.401 | 94 | 42.639 | 0.048 | 3.166 | 118.28 |
| 1500 | 1518.4 | 7 | 2.725 | 34.561 | 27.568 | 94 | 42.500 | 0.017 | 3.162 | 145.48 |
| 2000 | 2024.3 | 6 | 2.004 | 34.613 | 27.673 | 94 | 41.257 | 0.022 | 2.990 | 165.55 |
| 2500 | 2533.0 | 5 | 1.735 | 34.647 | 27.723 | 94 | 41.799 | 0.067 | 3.194 | 172.17 |
| 3000 | 3042.6 | 4 | 1.609 | 34.664 | 27.749 | 94 | 40.469 | 0.021 | 2.986 | 171.78 |
| 3500 | 3555.4 | 3 | 1.520 | 34.678 | 27.770 | 94 | 39.317 | 0.014 | 2.828 | 170.86 |
| 4000 | 4067.2 | 2 | 1.494 | 34.686 | 27.782 | 94 | 38.677 | 0.034 | 2.808 | 166.25 |
| 4250 | 4323.9 | 1 | 1.509 | 34.688 | 27.784 | 94 | 38.307 | 0.005 | 2.671 | 162.70 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 27, 2005 15:08 | Cruise: | S405 | Latitude: | 35.459 | Year: | 2005 |
| Project: | CALCOFI | Station: | 67-90 | Longitude: | -124.906 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 19 | Secchi Depth: | --- | Day of Year: | 300 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.9 | 12 | 16.288 | 33.158 | 24.266 | 90 | 0.503 | 0.072 | 0.196 | 2.084 |
| 5 | 5.0 | 11 | 16.290 | 33.158 | 24.265 | 91 | 0.526 | 0.080 | 0.431 | 2.153 |
| 10 | 9.6 | 10 | 16.284 | 33.157 | 24.266 | 91 | 0.564 | 0.074 | 0.413 | 1.962 |
| 20 | 20.3 | 9 | 15.973 | 33.133 | 24.318 | 90 | 1.320 | 0.099 | 0.476 | 2.197 |
| 30 | 30.5 | 8 | 15.327 | 33.125 | 24.456 | 91 | 1.953 | 0.130 | 0.559 | 2.352 |
| 40 | 40.5 | 7 | 14.155 | 33.107 | 24.693 | 92 | 5.556 | 0.326 | 0.769 | 4.834 |
| 60 | 60.1 | 6 | 11.287 | 33.036 | 25.196 | 93 | 12.538 | 0.076 | 1.377 | 10.017 |
| 80 | 80.2 | 5 | 10.090 | 33.270 | 25.587 | 94 | 19.437 | 0.102 | 1.684 | 16.821 |
| 100 | 101.2 | 4 | 9.614 | 33.528 | 25.869 | 94 | 24.760 | 0.126 | 2.054 | 22.287 |
| 150 | 151.1 | 3 | 8.790 | 33.842 | 26.247 | 94 | 26.342 | 0.072 | 2.053 | 28.779 |
| 200 | 201.8 | 2 | 8.290 | 34.021 | 26.464 | 94 | 31.859 | 0.067 | 2.448 | 38.347 |
| 200 | 203.0 | 1 | 8.275 | 34.022 | 26.467 | 94 | 29.509 | 0.088 | 2.419 | 34.999 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.388 | 0.121 | 0 | 100 | 15.888 | 40.925 | 0 |
| 5 | 11 | 0.381 | 0.123 | 5 | 50 | 18.590 | 48.831 | 8 |
| 10 | 10 | 0.386 | 0.135 | 10 | 30 | 16.709 | 43.251 | 13 |
| 20 | 9 | 0.557 | 0.197 | 20 | 15 | 16.530 | 29.655 | 20 |
| 30 | 8 | 0.528 | 0.262 | 30 | 5 | 8.407 | 15.914 | 30 |
| 40 | 7 | 0.398 | 0.270 | 40 | 1 | 1.650 | 4.150 | 46 |
| 60 | 6 | 0.166 | 0.162 | 60 | 0.1 | 0.000 | 0.000 | 75 |
| 80 | 5 | 0.103 | 0.137 | | | | | |
| 100 | 4 | 0.051 | 0.074 | | | | | |
| 150 | 3 | 0.007 | 0.035 | | | | | |
| 200 | 2 | 0.004 | 0.028 | | | | | |
| 200 | 1 | 0.002 | 0.031 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 21.26 | mg m-2 day -1 | Carbon Fixation: | 549.18 | mg m-2 day-1 |
| Phaeophytin: | 9.40 | mg m-2 day -1 | Productivity Index: | 25.84 | mg C mg Chl day-1 |
| Mixed Layer | 23 | meters | PBOpt: | 48.83 | mg C mg Chl day-1 |

Date: Oct 27, 2005 17:28 Cruise: S405 Latitude: 35.706 Year: 2005
 Project: CALCOFI Station: 65.25-90 Longitude: -125.09 Work week: 44
 Platform: RV POINT SUR Cast: 20 Secchi Depth: --- Day of Year: 300

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.6 | 12 | 16.561 | 33.245 | 24.270 | 90 | 0.061 | 0.060 | 0.377 | 1.990 |
| 5 | 4.9 | 11 | 16.562 | 33.245 | 24.270 | 90 | 0.149 | 0.094 | 0.375 | 1.927 |
| 10 | 10.6 | 10 | 16.531 | 33.245 | 24.277 | 90 | 0.173 | 0.090 | 0.427 | 1.842 |
| 20 | 20.0 | 9 | 16.418 | 33.243 | 24.302 | 90 | 0.336 | 0.072 | 0.518 | 1.928 |
| 30 | 29.9 | 8 | 15.943 | 33.228 | 24.399 | 90 | 0.649 | 0.090 | 0.392 | 1.754 |
| 40 | 40.6 | 7 | 15.031 | 33.226 | 24.599 | 91 | 4.020 | 0.225 | 0.577 | 3.518 |
| 60 | 60.8 | 6 | 10.490 | 33.314 | 25.554 | 93 | 20.496 | 0.103 | 1.532 | 17.654 |
| 80 | 80.3 | 5 | 9.421 | 33.463 | 25.849 | 94 | 23.884 | 0.059 | 1.895 | 23.123 |
| 100 | 101.0 | 4 | 9.119 | 33.684 | 26.070 | 94 | 24.936 | 0.058 | 1.915 | 25.302 |
| 150 | 150.5 | 3 | 8.579 | 33.936 | 26.354 | 94 | 29.579 | 0.063 | 2.114 | 33.943 |
| 200 | 203.4 | 2 | 8.035 | 34.035 | 26.514 | 94 | 26.612 | 0.049 | 2.028 | 33.709 |
| 1000 | 1009.5 | 1 | 3.686 | 34.471 | 27.405 | 94 | 45.486 | 0.063 | 3.426 | 126.66 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.353 | 0.116 | 0 | 100 | 7.641 | 21.619 | 0 |
| 5 | 11 | 0.374 | 0.113 | 5 | 50 | 9.171 | 24.514 | 8 |
| 10 | 10 | 0.353 | 0.111 | 10 | 30 | 8.944 | 25.307 | 13 |
| 20 | 9 | 0.532 | 0.229 | 20 | 15 | 10.538 | 19.807 | 20 |
| 30 | 8 | 0.196 | 0.170 | 30 | 5 | 7.183 | 36.737 | 32 |
| 40 | 7 | 0.232 | 0.165 | 40 | 1 | 1.849 | 7.965 | 54 |
| 60 | 6 | 0.106 | 0.070 | 60 | 0.1 | 0.005 | 0.047 | 117 |
| 80 | 5 | 0.005 | 0.031 | | | | | |
| 150 | 3 | 0.001 | 0.019 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 16.96 | mg m-2 day -1 | Carbon Fixation: | 388.26 | mg m-2 day-1 |
| Phaeophytin: | 8.73 | mg m-2 day -1 | Productivity Index: | 22.89 | mg C mg Chl day-1 |
| Mixed Layer | 38 | meters | PBOpt: | 36.74 | mg C mg Chl day-1 |

Date: Oct 27, 2005 20:43 Cruise: S405 Latitude: 36.009 Year: 2005
 Project: CALCOFI Station: 63.5-90 Longitude: -125.317 Work week: 44
 Platform: RV POINT SUR Cast: 21 Secchi Depth: --- Day of Year: 300

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|------------------------|--|-----------------------|--------------|
| 0 | 1.3 | 12 | 16.527 | 33.239 | 24.273 | 89 | 0.041 | 0.038 | 0.200 | 1.775 |
| 5 | 4.8 | 11 | 16.516 | 33.239 | 24.276 | 89 | 0.046 | 0.045 | 0.299 | 1.761 |
| 10 | 10.9 | 10 | 16.516 | 33.239 | 24.276 | 89 | 0.059 | 0.058 | 0.258 | 1.611 |
| 20 | 20.4 | 9 | 16.399 | 33.234 | 24.300 | 89 | 0.055 | 0.052 | 0.239 | 1.725 |
| 30 | 29.5 | 8 | 16.091 | 33.222 | 24.361 | 89 | 0.294 | 0.050 | 0.221 | 1.842 |
| 40 | 39.9 | 7 | 15.448 | 33.210 | 24.496 | 92 | 3.568 | 0.233 | 0.514 | 3.471 |
| 60 | 58.8 | 6 | 11.197 | 33.234 | 25.366 | 93 | 17.326 | 0.081 | 1.300 | 14.052 |
| 80 | 80.4 | 5 | 9.829 | 33.435 | 25.760 | 94 | 22.283 | 0.113 | 1.657 | 19.595 |
| 100 | 100.7 | 4 | 9.388 | 33.698 | 26.038 | 94 | 22.384 | 0.099 | 1.867 | 22.231 |
| 150 | 151.8 | 3 | 8.631 | 33.979 | 26.379 | 94 | 29.902 | 0.089 | 2.165 | 34.757 |
| 200 | 202.5 | 2 | 8.111 | 34.075 | 26.534 | 94 | 29.603 | 0.050 | 2.321 | 38.052 |
| 1000 | 1010.0 | 1 | 3.711 | 34.451 | 27.386 | 94 | 40.842 | 0.089 | 3.089 | 118.79 |
| | | | | | | DEP (m) | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) | |
| | | | | | | 0 | 100 | 10.290 | --- | |
| | | | | | | 10 | 50 | 9.908 | --- | |
| | | | | | | 10 | 30 | 9.697 | --- | |
| | | | | | | 20 | 15 | 6.080 | --- | |
| | | | | | | 30 | 5 | 4.328 | --- | |
| | | | | | | 60 | 1 | 0.786 | --- | |
| | | | | | | 80 | 0.1 | 0.099 | --- | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-----|---------------|---------------------|-----|-------------------|
| Chlorophyll <i>a</i> : | --- | mg m-2 day -1 | Carbon Fixation: | --- | mg m-2 day-1 |
| Phaeophytin: | --- | mg m-2 day -1 | Productivity Index: | --- | mg C mg Chl day-1 |
| Mixed Layer | 20 | meters | PBOpt: | --- | mg C mg Chl day-1 |

Date: Oct 27, 2005 23:56 Cruise: S405 Latitude: 36.313 Year: 2005
 Project: CALCOFI Station: 61.75-90 Longitude: -125.542 Work week: 44
 Platform: RV POINT SUR Cast: 22 Secchi Depth: --- Day of Year: 300

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.9 | 12 | 16.426 | 33.228 | 24.288 | 90 | 0.067 | 0.057 | 0.195 | 2.002 |
| 5 | 5.3 | 11 | 16.427 | 33.228 | 24.288 | 90 | 0.071 | 0.042 | 0.342 | 1.925 |
| 10 | 10.4 | 10 | 16.424 | 33.228 | 24.288 | 90 | 0.140 | 0.072 | 0.493 | 2.119 |
| 20 | 20.2 | 9 | 16.378 | 33.225 | 24.297 | 90 | 0.071 | 0.032 | 0.261 | 2.040 |
| 30 | 30.1 | 8 | 15.979 | 33.220 | 24.385 | 90 | 0.419 | 0.064 | 0.393 | 2.133 |
| 40 | 40.3 | 7 | 15.725 | 33.214 | 24.438 | 91 | 0.880 | 0.090 | 0.352 | 2.203 |
| 60 | 60.7 | 6 | 13.384 | 33.203 | 24.926 | 93 | 9.362 | 0.323 | 0.833 | 7.552 |
| 80 | 81.5 | 5 | 10.556 | 33.304 | 25.535 | 93 | 18.283 | 0.039 | 1.284 | 14.622 |
| 100 | 100.9 | 4 | 9.614 | 33.533 | 25.872 | 94 | 23.305 | 0.034 | 1.591 | 20.971 |
| 150 | 151.2 | 3 | 8.808 | 33.947 | 26.326 | 94 | 29.258 | 0.052 | 2.178 | 33.551 |
| 200 | 203.0 | 2 | 8.235 | 34.062 | 26.505 | 94 | 32.774 | 0.037 | 2.252 | 41.076 |
| 1000 | 1006.9 | 1 | 3.755 | 34.452 | 27.383 | 94 | 45.478 | 0.071 | 3.448 | 125.62 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.313 | 0.111 | 0 | 100 | 10.138 | 32.386 | 0 |
| 5 | 11 | 0.318 | 0.103 | 10 | 50 | 13.125 | 41.556 | 8 |
| 10 | 10 | 0.316 | 0.110 | 10 | 30 | 11.730 | 37.140 | 14 |
| 20 | 9 | 0.416 | 0.164 | 20 | 15 | 12.807 | 30.755 | 22 |
| 30 | 8 | 0.578 | 0.227 | 30 | 5 | 9.821 | 16.988 | 32 |
| 40 | 7 | 0.503 | 0.241 | 60 | 1 | 1.079 | 4.221 | 48 |
| 60 | 6 | 0.256 | 0.210 | 80 | 0.1 | 0.000 | 0.000 | 74 |
| 80 | 5 | 0.151 | 0.148 | | | | | |
| 100 | 4 | 0.057 | 0.066 | | | | | |
| 150 | 3 | 0.019 | 0.033 | | | | | |
| 200 | 2 | 0.021 | 0.017 | | | | | |
| 1000 | 1 | 0.001 | 0.007 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 18.90 | mg m-2 day -1 | Carbon Fixation: | 463.95 | mg m-2 day-1 |
| Phaeophytin: | 8.04 | mg m-2 day -1 | Productivity Index: | 24.54 | mg C mg Chl day-1 |
| Mixed Layer | 27 | meters | PBOpt: | 41.56 | mg C mg Chl day-1 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 28, 2005 03:08 | Cruise: | S405 | Latitude: | 36.614 | Year: | 2005 |
| Project: | CALCOFI | Station: | 60-90 | Longitude: | -125.771 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 23 | Secchi Depth: | --- | Day of Year: | 301 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.8 | 12 | 15.722 | 33.071 | 24.326 | 89 | 1.784 | 0.111 | 0.407 | 1.559 |
| 5 | 5.8 | 11 | 15.702 | 33.070 | 24.331 | 89 | 2.307 | 0.166 | 0.523 | 1.685 |
| 10 | 10.7 | 10 | 15.673 | 33.070 | 24.337 | 89 | 2.005 | 0.147 | 0.518 | 1.603 |
| 20 | 20.2 | 9 | 15.588 | 33.070 | 24.356 | 90 | 2.261 | 0.127 | 0.474 | 1.631 |
| 30 | 30.2 | 8 | 15.104 | 33.056 | 24.452 | 90 | 2.766 | 0.167 | 0.716 | 1.991 |
| 40 | 40.9 | 7 | 14.297 | 33.196 | 24.732 | 92 | 5.765 | 0.286 | 0.810 | 4.146 |
| 60 | 60.6 | 6 | 11.068 | 33.036 | 25.236 | 93 | 12.434 | 0.106 | 1.069 | 10.023 |
| 80 | 81.1 | 5 | 9.961 | 33.260 | 25.601 | 94 | 19.584 | 0.050 | 1.436 | 17.212 |
| 100 | 102.0 | 4 | 9.399 | 33.500 | 25.882 | 94 | 23.440 | 0.057 | 1.641 | 22.146 |
| 150 | 151.4 | 3 | 8.991 | 33.840 | 26.213 | 94 | 28.769 | 0.046 | 2.001 | 30.684 |
| 200 | 201.7 | 2 | 8.222 | 34.007 | 26.464 | 94 | 30.996 | 0.086 | 2.314 | 38.197 |
| 4265 | 4341.4 | 1 | 1.512 | 34.688 | 27.784 | 94 | 37.662 | 0.051 | 2.525 | 160.73 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.455 | 0.151 | 0 | 100 | 30.904 | 67.926 | 0 |
| 5 | 11 | 0.451 | 0.184 | 10 | 50 | 30.288 | 66.435 | 7 |
| 10 | 10 | 0.456 | 0.149 | 10 | 30 | 26.599 | 58.344 | 12 |
| 20 | 9 | 0.509 | 0.169 | 20 | 15 | 20.836 | 40.972 | 19 |
| 30 | 8 | 0.520 | 0.235 | 30 | 5 | 8.601 | 16.547 | 30 |
| 40 | 7 | 0.426 | 0.233 | 60 | 1 | 0.820 | 3.843 | 46 |
| 60 | 6 | 0.213 | 0.174 | 80 | 0.1 | 0.094 | 1.218 | 74 |
| 80 | 5 | 0.077 | 0.073 | | | | | |
| 100 | 4 | 0.042 | 0.046 | | | | | |
| 150 | 3 | 0.007 | 0.027 | | | | | |
| 200 | 2 | 0.004 | 0.016 | | | | | |
| 4265 | 1 | 0.000 | 0.000 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 20.21 | mg m-2 day -1 | Carbon Fixation: | 756.47 | mg m-2 day-1 |
| Phaeophytin: | 8.34 | mg m-2 day -1 | Productivity Index: | 37.44 | mg C mg Chl day-1 |
| Mixed Layer | 84 | meters | PBOpt: | 67.93 | mg C mg Chl day-1 |

Date: Oct 28, 2005 08:55 Cruise: S405 Latitude: 36.783 Year: 2005
 Project: CALCOFI Station: 60-85 Longitude: -125.416 Work week: 44
 Platform: RV POINT SUR Cast: 24 Secchi Depth: --- Day of Year: 301

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.2 | 12 | 16.040 | 33.219 | 24.369 | 89 | 1.552 | 0.094 | 0.402 | 1.781 |
| 5 | 4.1 | 11 | 16.043 | 33.224 | 24.372 | 89 | 1.781 | 0.092 | 0.383 | 1.957 |
| 10 | 9.2 | 10 | 16.053 | 33.240 | 24.383 | 89 | 1.786 | 0.088 | 0.530 | 1.980 |
| 20 | 20.1 | 9 | 16.051 | 33.247 | 24.388 | 89 | 1.902 | 0.099 | 0.364 | 1.911 |
| 30 | 30.8 | 8 | 15.617 | 33.315 | 24.539 | 91 | 3.593 | 0.351 | 0.549 | 2.811 |
| 40 | 39.1 | 7 | 15.036 | 33.291 | 24.648 | 92 | 7.334 | 0.219 | 0.771 | 5.800 |
| 60 | 61.2 | 6 | 11.567 | 33.059 | 25.164 | 93 | 15.001 | 0.193 | 1.220 | 12.368 |
| 80 | 81.2 | 5 | 9.879 | 33.376 | 25.706 | 94 | 22.435 | 0.095 | 1.527 | 20.069 |
| 100 | 100.9 | 4 | 9.288 | 33.625 | 25.997 | 94 | 22.865 | 0.049 | 1.746 | 24.418 |
| 150 | 150.8 | 3 | 8.897 | 33.928 | 26.298 | 94 | 25.047 | 0.021 | 1.754 | 27.614 |
| 200 | 201.7 | 2 | 8.324 | 34.030 | 26.467 | 94 | 29.144 | 0.072 | 2.253 | 32.167 |
| 1000 | 1006.9 | 1 | 3.792 | 34.448 | 27.376 | 94 | --- | --- | --- | --- |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.471 | 0.137 | 0 | 100 | 26.851 | 57.015 | 0 |
| 5 | 11 | 0.464 | 0.124 | 10 | 50 | 28.038 | 61.627 | 7 |
| 10 | 10 | 0.455 | 0.142 | 10 | 30 | 22.583 | 49.637 | 12 |
| 20 | 9 | 0.442 | 0.124 | 20 | 15 | 17.305 | 39.170 | 20 |
| 30 | 8 | 0.431 | 0.189 | 30 | 5 | 7.913 | 18.380 | 31 |
| 40 | 7 | 0.305 | 0.177 | 60 | 1 | 0.685 | 3.469 | 49 |
| 60 | 6 | 0.197 | 0.150 | 80 | 0.1 | 0.000 | 0.000 | 82 |
| 80 | 5 | 0.084 | 0.070 | | | | | |
| 100 | 4 | 0.038 | 0.050 | | | | | |
| 150 | 3 | 0.004 | 0.029 | | | | | |
| 200 | 2 | 0.004 | 0.019 | | | | | |
| 1000 | 1 | 0.002 | 0.006 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 19.66 | mg m-2 day -1 | Carbon Fixation: | 696.47 | mg m-2 day-1 |
| Phaeophytin: | 7.59 | mg m-2 day -1 | Productivity Index: | 35.43 | mg C mg Chl day-1 |
| Mixed Layer | 850 | meters | PBOpt: | 61.63 | mg C mg Chl day-1 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 28, 2005 13:40 | Cruise: | S405 | Latitude: | 36.948 | Year: | 2005 |
| Project: | CALCOFI | Station: | 60-80 | Longitude: | -125.052 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 25 | Secchi Depth: | --- | Day of Year: | 301 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.6 | 12 | 15.049 | 33.140 | 24.528 | 90 | 4.657 | 0.175 | 0.508 | 3.055 |
| 5 | 5.2 | 11 | 15.056 | 33.138 | 24.525 | 90 | 3.795 | 0.145 | 0.680 | 2.912 |
| 10 | 10.2 | 10 | 15.040 | 33.136 | 24.526 | 90 | 3.848 | 0.142 | 0.561 | 2.881 |
| 20 | 21.2 | 9 | 14.520 | 33.211 | 24.696 | 91 | 5.874 | 0.350 | 0.905 | 4.053 |
| 30 | 29.7 | 8 | 13.821 | 33.241 | 24.866 | 92 | 6.513 | 0.244 | 0.841 | 4.482 |
| 40 | 40.0 | 7 | 13.699 | 33.247 | 24.896 | 92 | 7.037 | 0.327 | 0.971 | 5.823 |
| 60 | 60.8 | 6 | 11.570 | 33.309 | 25.357 | 93 | 16.774 | 0.284 | 1.619 | 13.405 |
| 80 | 80.1 | 5 | 9.996 | 33.389 | 25.697 | 93 | 21.602 | 0.086 | 1.764 | 18.924 |
| 100 | 99.4 | 4 | 9.124 | 33.557 | 25.970 | 93 | 24.329 | 0.178 | 2.103 | 24.595 |
| 150 | 151.9 | 3 | 8.808 | 33.952 | 26.330 | 94 | 30.095 | 0.174 | 2.517 | 34.548 |
| 200 | 201.1 | 2 | 8.306 | 34.050 | 26.485 | 94 | 32.139 | 0.043 | 2.307 | 40.419 |
| 1000 | 1009.6 | 1 | 3.868 | 34.460 | 27.378 | 94 | 44.812 | 0.056 | 3.445 | 120.43 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.455 | 0.133 | 0 | 100 | 19.384 | 42.605 | 0 |
| 5 | 11 | 0.463 | 0.126 | 10 | 50 | 18.610 | 54.241 | 7 |
| 10 | 10 | 0.343 | 0.116 | 20 | 30 | 16.545 | 46.937 | 13 |
| 20 | 9 | 0.353 | 0.150 | 20 | 15 | 12.660 | 35.916 | 21 |
| 30 | 8 | 0.381 | 0.172 | 40 | 5 | 6.105 | 14.930 | 33 |
| 40 | 7 | 0.409 | 0.213 | 60 | 1 | 0.666 | 3.959 | 50 |
| 60 | 6 | 0.168 | 0.146 | 80 | 0.1 | 0.084 | 0.720 | 81 |
| 80 | 5 | 0.117 | 0.118 | | | | | |
| 100 | 4 | 0.039 | 0.065 | | | | | |
| 150 | 3 | 0.019 | 0.033 | | | | | |
| 200 | 2 | 0.003 | 0.016 | | | | | |
| 1000 | 1 | 0.002 | 0.007 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 17.23 | mg m-2 day -1 | Carbon Fixation: | 523.07 | mg m-2 day-1 |
| Phaeophytin: | 8.14 | mg m-2 day -1 | Productivity Index: | 30.36 | mg C mg Chl day-1 |
| Mixed Layer | 120 | meters | PBOpt: | 54.24 | mg C mg Chl day-1 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 28, 2005 17:16 | Cruise: | S405 | Latitude: | 37.115 | Year: | 2005 |
| Project: | CALCOFI | Station: | 60-75 | Longitude: | -124.693 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 26 | Secchi Depth: | --- | Day of Year: | 301 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.8 | 12 | 15.103 | 33.250 | 24.600 | 88 | 1.371 | 0.101 | 0.222 | 3.195 |
| 5 | 4.2 | 11 | 15.095 | 33.252 | 24.604 | 88 | 1.397 | 0.100 | 0.258 | 3.174 |
| 10 | 9.7 | 10 | 15.059 | 33.266 | 24.623 | 88 | 1.510 | 0.086 | 0.270 | 3.116 |
| 20 | 19.8 | 9 | 14.634 | 33.267 | 24.715 | 90 | 3.608 | 0.158 | 0.399 | 3.902 |
| 30 | 30.4 | 8 | 13.809 | 33.275 | 24.895 | 91 | 6.203 | 0.249 | 0.659 | 5.140 |
| 40 | 39.7 | 7 | 13.094 | 33.317 | 25.071 | 92 | 8.466 | 0.353 | 0.865 | 8.862 |
| 60 | 60.4 | 6 | 11.425 | 33.471 | 25.510 | 93 | 21.459 | 0.235 | 1.672 | 19.456 |
| 80 | 81.2 | 5 | 9.811 | 33.756 | 26.014 | 93 | 27.031 | 0.034 | 1.941 | 26.907 |
| 100 | 99.9 | 4 | 9.566 | 33.856 | 26.132 | 93 | 28.602 | 0.030 | 2.099 | 30.638 |
| 150 | 150.8 | 3 | 9.234 | 34.066 | 26.352 | 94 | 30.713 | 0.028 | 2.290 | 35.990 |
| 200 | 202.7 | 2 | 8.729 | 34.165 | 26.510 | 94 | 32.049 | 0.031 | 2.383 | 41.591 |
| 1000 | 1010.4 | 1 | 3.968 | 34.445 | 27.356 | 94 | 45.202 | 0.018 | 3.324 | 119.21 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.996 | 0.292 | 0 | 100 | 39.550 | 39.693 | 0 |
| 5 | 11 | 1.015 | 0.316 | 5 | 50 | 47.666 | 46.952 | 5 |
| 10 | 10 | 0.921 | 0.341 | 10 | 30 | 39.977 | 43.397 | 9 |
| 20 | 9 | 0.714 | 0.312 | 10 | 15 | 27.144 | 29.466 | 14 |
| 30 | 8 | 0.790 | 0.316 | 20 | 5 | 9.140 | 12.794 | 23 |
| 40 | 7 | 0.479 | 0.243 | 30 | 1 | 2.445 | 3.097 | 36 |
| 60 | 6 | 0.248 | 0.171 | 40 | 0.1 | 0.253 | 0.528 | 60 |
| 80 | 5 | 0.108 | 0.103 | | | | | |
| 100 | 4 | 0.086 | 0.183 | | | | | |
| 150 | 3 | 0.019 | 0.080 | | | | | |
| 200 | 2 | 0.014 | 0.059 | | | | | |
| 1000 | 1 | 0.002 | 0.014 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 30.83 | mg m-2 day -1 | Carbon Fixation: | 801.83 | mg m-2 day-1 |
| Phaeophytin: | 11.63 | mg m-2 day -1 | Productivity Index: | 26.01 | mg C mg Chl day-1 |
| Mixed Layer | 366 | meters | PBOpt: | 46.95 | mg C mg Chl day-1 |

Date: Oct 28, 2005 21:11 Cruise: S405 Latitude: 37.282 Year: 2005
 Project: CALCOFI Station: 60-70 Longitude: -124.336 Work week: 44
 Platform: RV POINT SUR Cast: 27 Secchi Depth: --- Day of Year: 301

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.7 | 12 | 14.861 | 33.179 | 24.599 | 90 | 4.962 | 0.137 | 0.459 | 3.878 |
| 5 | 5.3 | 11 | 14.800 | 33.189 | 24.619 | 89 | 4.959 | 0.136 | 0.530 | 3.820 |
| 10 | 10.1 | 10 | 14.738 | 33.207 | 24.646 | 89 | 5.075 | 0.151 | 0.542 | 3.760 |
| 20 | 19.9 | 9 | 13.812 | 33.278 | 24.896 | 90 | 6.759 | 0.241 | 0.739 | 5.090 |
| 30 | 29.9 | 8 | 13.057 | 33.316 | 25.078 | 90 | 8.732 | 0.331 | 0.892 | 6.414 |
| 40 | 41.0 | 7 | 12.735 | 33.328 | 25.151 | 92 | 14.956 | 0.337 | 1.273 | 12.971 |
| 60 | 59.9 | 6 | 10.294 | 33.801 | 25.967 | 93 | 28.072 | 0.098 | 2.196 | 29.099 |
| 80 | 81.3 | 5 | 9.788 | 33.966 | 26.182 | 93 | 28.691 | 0.029 | 2.129 | 30.951 |
| 100 | 100.3 | 4 | 9.639 | 34.013 | 26.243 | 94 | 27.163 | 0.025 | 2.119 | 30.194 |
| 150 | 150.5 | 3 | 9.431 | 34.087 | 26.336 | 94 | 30.647 | 0.042 | 2.337 | 35.632 |
| 200 | 201.2 | 2 | 9.104 | 34.152 | 26.441 | 94 | 30.334 | 0.037 | 2.421 | 37.318 |
| 1000 | 1011.1 | 1 | 3.991 | 34.446 | 27.354 | 94 | 44.855 | 0.030 | 3.310 | 117.94 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.553 | 0.163 | 0 | 100 | 23.553 | 42.613 | 0 |
| 5 | 11 | 0.525 | 0.165 | 10 | 50 | 27.860 | 51.012 | 7 |
| 10 | 10 | 0.546 | 0.201 | 10 | 30 | 27.577 | 50.494 | 11 |
| 20 | 9 | 0.808 | 0.401 | 20 | 15 | 26.709 | 33.040 | 17 |
| 30 | 8 | 0.799 | 0.445 | 30 | 5 | 13.561 | 16.972 | 26 |
| 40 | 7 | 0.507 | 0.304 | 60 | 1 | 0.793 | 4.437 | 38 |
| 60 | 6 | 0.179 | 0.141 | 80 | 0.1 | 0.040 | 0.656 | 63 |
| 80 | 5 | 0.061 | 0.089 | | | | | |
| 100 | 4 | 0.011 | 0.055 | | | | | |
| 150 | 3 | 0.014 | 0.077 | | | | | |
| 200 | 2 | 0.010 | 0.058 | | | | | |
| 1000 | 1 | 0.002 | 0.014 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 23.28 | mg m-2 day -1 | Carbon Fixation: | 722.23 | mg m-2 day-1 |
| Phaeophytin: | 11.28 | mg m-2 day -1 | Productivity Index: | 31.02 | mg C mg Chl day-1 |
| Mixed Layer | 55 | meters | PBOpt: | 51.01 | mg C mg Chl day-1 |

Date: Oct 29, 2005 01:00 Cruise: S405 Latitude: 37.447 Year: 2005
 Project: CALCOFI Station: 60-65 Longitude: -123.972 Work week: 44
 Platform: RV POINT SUR Cast: 28 Secchi Depth: --- Day of Year: 302

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.1 | 12 | 14.519 | 33.211 | 24.696 | 85 | 1.531 | 0.114 | 0.425 | 3.369 |
| 5 | 4.6 | 11 | 14.517 | 33.210 | 24.696 | 85 | 1.905 | 0.143 | 0.451 | 4.050 |
| 10 | 10.2 | 10 | 14.437 | 33.230 | 24.728 | 87 | 2.253 | 0.145 | 0.432 | 3.982 |
| 20 | 19.5 | 9 | 14.248 | 33.251 | 24.785 | 90 | 2.927 | 0.189 | 0.537 | 4.116 |
| 30 | 29.2 | 8 | 13.292 | 33.289 | 25.010 | 92 | 8.238 | 0.379 | 0.831 | 5.341 |
| 40 | 40.2 | 7 | 12.565 | 33.361 | 25.209 | 92 | 9.752 | 0.414 | 1.032 | 8.269 |
| 60 | 61.1 | 6 | 11.690 | 33.433 | 25.432 | 93 | 13.639 | 0.392 | 1.166 | 12.631 |
| 80 | 80.2 | 5 | 9.915 | 33.494 | 25.792 | 93 | 21.419 | 0.059 | 1.736 | 19.342 |
| 100 | 100.8 | 4 | 9.114 | 33.700 | 26.084 | 93 | 25.971 | 0.091 | 1.833 | 26.718 |
| 150 | 151.8 | 3 | 8.765 | 33.990 | 26.367 | 94 | 25.540 | 0.052 | 1.967 | 29.824 |
| 200 | 201.6 | 2 | 8.272 | 34.054 | 26.494 | 94 | 30.461 | 0.037 | 2.203 | 38.706 |
| 1000 | 1010.6 | 1 | 3.823 | 34.460 | 27.382 | 94 | 39.219 | 0.041 | 3.212 | 109.01 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 3.337 | 0.579 | 0 | 100 | 136.412 | 40.879 | 0 |
| 5 | 11 | 2.717 | 0.538 | 5 | 50 | 146.504 | 53.929 | 3 |
| 10 | 10 | 1.861 | 0.410 | 10 | 30 | 79.242 | 42.576 | 6 |
| 20 | 9 | 0.761 | 0.309 | 10 | 15 | 61.283 | 32.927 | 10 |
| 30 | 8 | 0.508 | 0.223 | 20 | 5 | 14.414 | 18.931 | 17 |
| 40 | 7 | 0.437 | 0.237 | 30 | 1 | 2.361 | 4.652 | 30 |
| 60 | 6 | 0.285 | 0.202 | 40 | 0.1 | 0.517 | 1.183 | 53 |
| 80 | 5 | 0.107 | 0.130 | | | | | |
| 100 | 4 | 0.088 | 0.124 | | | | | |
| 150 | 3 | 0.029 | 0.059 | | | | | |
| 200 | 2 | 0.031 | 0.039 | | | | | |
| 1000 | 1 | 0.002 | 0.013 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 40.36 | mg m-2 day -1 | Carbon Fixation: | 1298.2 | mg m-2 day-1 |
| Phaeophytin: | 10.60 | mg m-2 day -1 | Productivity Index: | 32.17 | mg C mg Chl day-1 |
| Mixed Layer | --- | meters | PBOpt: | 53.93 | mg C mg Chl day-1 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 29, 2005 04:57 | Cruise: | S405 | Latitude: | 37.615 | Year: | 2005 |
| Project: | CALCOFI | Station: | 60-60 | Longitude: | -123.609 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 29 | Secchi Depth: | --- | Day of Year: | 302 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.7 | 12 | 14.413 | 33.204 | 24.713 | 89 | 0.823 | 0.136 | 0.447 | 2.855 |
| 5 | 4.9 | 11 | 14.419 | 33.207 | 24.715 | 89 | 0.853 | 0.128 | 0.302 | 2.679 |
| 10 | 10.2 | 10 | 14.387 | 33.273 | 24.772 | 90 | 1.018 | 0.129 | 0.375 | 2.961 |
| 20 | 20.0 | 9 | 13.525 | 33.307 | 24.977 | 91 | 4.817 | 0.320 | 0.700 | 5.794 |
| 30 | 30.0 | 8 | 11.919 | 33.312 | 25.294 | 93 | 13.859 | 0.512 | 1.162 | 11.220 |
| 40 | 40.6 | 7 | 10.873 | 33.434 | 25.580 | 93 | 18.180 | 0.126 | 1.423 | 15.619 |
| 60 | 60.1 | 6 | 9.953 | 33.531 | 25.814 | 93 | 21.990 | 0.098 | 1.734 | 20.856 |
| 80 | 79.3 | 5 | 9.493 | 33.685 | 26.010 | 93 | 24.277 | 0.106 | 1.927 | 24.497 |
| 100 | 100.8 | 4 | 8.940 | 33.797 | 26.187 | 94 | 25.877 | 0.096 | 1.974 | 28.223 |
| 150 | 152.7 | 3 | 8.657 | 34.032 | 26.417 | 94 | 29.824 | 0.060 | 2.245 | 36.296 |
| 200 | 201.9 | 2 | 8.142 | 34.090 | 26.541 | 94 | 31.898 | 0.053 | 2.415 | 43.165 |
| 1000 | 1009.7 | 1 | 3.864 | 34.448 | 27.369 | 94 | 43.997 | 0.047 | 3.490 | 115.31 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 0.640 | 0.012 | 0 | 100 | 32.509 | 50.785 | 0 |
| 5 | 11 | 0.696 | 0.270 | 5 | 50 | 45.101 | 64.838 | 6 |
| 10 | 10 | 0.555 | 0.481 | 10 | 30 | 38.979 | 70.284 | 10 |
| 20 | 9 | 0.536 | 0.430 | 10 | 15 | 36.155 | 65.190 | 16 |
| 30 | 8 | 0.467 | 0.232 | 20 | 5 | 9.977 | 18.621 | 26 |
| 40 | 7 | 0.294 | 0.234 | 30 | 1 | 1.864 | 3.989 | 42 |
| 60 | 6 | 0.170 | 0.165 | 40 | 0.1 | 0.164 | 0.559 | 71 |
| 80 | 5 | 0.111 | 0.132 | | | | | |
| 100 | 4 | 0.066 | 0.071 | | | | | |
| 150 | 3 | 0.046 | 0.052 | | | | | |
| 200 | 2 | 0.027 | 0.032 | | | | | |
| 1000 | 1 | 0.006 | 0.031 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 23.14 | mg m-2 day -1 | Carbon Fixation: | 907.79 | mg m-2 day-1 |
| Phaeophytin: | 14.84 | mg m-2 day -1 | Productivity Index: | 39.23 | mg C mg Chl day-1 |
| Mixed Layer | 550 | meters | PBOpt: | 70.28 | mg C mg Chl day-1 |

Date: Oct 29, 2005 07:38 Cruise: S405 Latitude: 37.701 Year: 2005
 Project: CALCOFI Station: 60-57.5 Longitude: -123.431 Work week: 44
 Platform: RV POINT SUR Cast: 30 Secchi Depth: --- Day of Year: 302

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 3.4 | 12 | 14.117 | 33.252 | 24.812 | 88 | 1.315 | 0.132 | 0.304 | 3.683 |
| 5 | 5.0 | 11 | 14.121 | 33.253 | 24.812 | 88 | 1.428 | 0.135 | 0.448 | 3.495 |
| 10 | 10.2 | 10 | 14.111 | 33.275 | 24.831 | 90 | 2.875 | 0.180 | 0.445 | 4.895 |
| 20 | 19.6 | 9 | 12.427 | 33.375 | 25.247 | 93 | 8.268 | 0.410 | 0.874 | 9.041 |
| 30 | 28.7 | 8 | 11.856 | 33.405 | 25.378 | 93 | 11.937 | 0.369 | 1.085 | 11.576 |
| 40 | 39.4 | 7 | 10.880 | 33.417 | 25.565 | 93 | 16.601 | 0.103 | 1.403 | 13.987 |
| 60 | 60.6 | 6 | 10.164 | 33.444 | 25.711 | 93 | 20.369 | 0.103 | 1.577 | 18.718 |
| 80 | 80.6 | 5 | 9.892 | 33.582 | 25.864 | 93 | 20.474 | 0.149 | 1.697 | 19.690 |
| 100 | 100.1 | 4 | 9.471 | 33.717 | 26.040 | 94 | 22.960 | 0.072 | 1.790 | 23.359 |
| 150 | 153.5 | 3 | 8.835 | 33.987 | 26.353 | 94 | 27.033 | 0.090 | 2.081 | 31.541 |
| 200 | 204.3 | 2 | 8.402 | 34.041 | 26.464 | 94 | 27.921 | 0.067 | 2.183 | 35.448 |
| 1000 | 1009.6 | 1 | 3.792 | 34.454 | 27.380 | 94 | 43.871 | 0.055 | 3.496 | 123.05 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 12 | 1.786 | 0.320 | 0 | 100 | 50.665 | 28.368 | 0 |
| 5 | 11 | 1.401 | 0.357 | 5 | 50 | 51.324 | 36.644 | 4 |
| 10 | 10 | 0.949 | 0.321 | 10 | 30 | 32.426 | 34.154 | 8 |
| 20 | 9 | 0.403 | 0.224 | 10 | 15 | 20.972 | 22.090 | 13 |
| 30 | 8 | 0.286 | 0.231 | 20 | 5 | 4.472 | 11.089 | 23 |
| 40 | 7 | 0.281 | 0.236 | 30 | 1 | 0.999 | 3.496 | 40 |
| 60 | 6 | 0.203 | 0.166 | 40 | 0.1 | 0.000 | 0.000 | 68 |
| 80 | 5 | 0.179 | 0.160 | | | | | |
| 100 | 4 | 0.092 | 0.145 | | | | | |
| 150 | 3 | 0.026 | 0.086 | | | | | |
| 200 | 2 | 0.030 | 0.077 | | | | | |
| 1000 | 1 | 0.005 | 0.025 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 28.70 | mg m-2 day -1 | Carbon Fixation: | 674.84 | mg m-2 day-1 |
| Phaeophytin: | 11.01 | mg m-2 day -1 | Productivity Index: | 23.51 | mg C mg Chl day-1 |
| Mixed Layer | 57 | meters | PBOpt: | 36.64 | mg C mg Chl day-1 |

| | | | | | | | |
|-----------|--------------------|----------|-------|---------------|----------|--------------|------|
| Date: | Oct 29, 2005 10:30 | Cruise: | S405 | Latitude: | 37.783 | Year: | 2005 |
| Project: | CALCOFI | Station: | 60-55 | Longitude: | -123.251 | Work week: | 44 |
| Platform: | RV POINT SUR | Cast: | 31 | Secchi Depth: | --- | Day of Year: | 302 |

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.3 | 12 | 14.322 | 33.242 | 24.762 | 90 | 1.614 | 0.133 | 0.344 | 3.137 |
| 0 | 2.5 | 11 | 14.322 | 33.242 | 24.762 | 90 | 1.370 | 0.120 | 0.563 | 2.761 |
| 0 | 2.5 | 10 | 14.323 | 33.242 | 24.762 | 90 | 1.589 | 0.137 | 0.492 | 3.010 |
| 5 | 5.1 | 9 | 14.325 | 33.241 | 24.761 | 90 | 1.768 | 0.146 | 0.468 | 3.115 |
| 10 | 10.1 | 8 | 14.145 | 33.255 | 24.809 | 90 | 4.529 | 0.209 | 0.622 | 5.524 |
| 20 | 20.3 | 7 | 12.767 | 33.359 | 25.168 | 91 | 9.801 | 0.323 | 1.178 | 11.620 |
| 30 | 31.2 | 6 | 11.374 | 33.460 | 25.510 | 92 | 12.575 | 0.291 | 1.156 | 12.631 |
| 40 | 40.2 | 5 | 10.863 | 33.475 | 25.613 | 93 | 14.477 | 0.265 | 1.277 | 13.271 |
| 60 | 61.1 | 4 | 9.873 | 33.666 | 25.933 | 93 | 23.278 | 0.101 | 1.847 | 23.372 |
| 80 | 80.3 | 3 | 9.653 | 33.737 | 26.025 | 89 | 22.347 | 0.247 | 2.164 | 24.877 |
| 100 | 100.1 | 2 | 9.634 | 33.752 | 26.041 | 89 | 25.170 | 0.278 | 2.304 | 28.418 |
| 125 | 125.8 | 1 | 9.622 | 33.760 | 26.049 | 89 | 23.842 | 0.239 | 2.181 | 26.921 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 10 | 0.902 | 0.229 | 0 | 100 | 38.617 | 42.794 | 0 |
| 5 | 9 | 0.949 | 0.225 | 5 | 50 | 33.673 | 35.468 | 5 |
| 10 | 8 | 1.184 | 0.304 | 10 | 30 | 47.419 | 40.036 | 9 |
| 20 | 7 | 0.771 | 0.361 | 10 | 15 | 34.879 | 29.448 | 14 |
| 30 | 6 | 0.329 | 0.237 | 20 | 5 | 12.876 | 16.704 | 23 |
| 40 | 5 | 0.184 | 0.213 | 30 | 1 | 1.219 | 3.707 | 39 |
| 60 | 4 | 0.105 | 0.217 | 40 | 0.1 | 0.234 | 1.271 | 68 |
| 80 | 3 | 0.123 | 0.333 | | | | | |
| 100 | 2 | 0.125 | 0.361 | | | | | |
| 125 | 1 | 0.108 | 0.373 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 32.25 | mg m-2 day -1 | Carbon Fixation: | 873.27 | mg m-2 day-1 |
| Phaeophytin: | 11.43 | mg m-2 day -1 | Productivity Index: | 27.08 | mg C mg Chl day-1 |
| Mixed Layer | --- | meters | PBOpt: | 42.79 | mg C mg Chl day-1 |

Date: Oct 29, 2005 12:34 Cruise: S405 Latitude: 37.864 Year: 2005
 Project: CALCOFI Station: 60-52.5 Longitude: -123.064 Work week: 44
 Platform: RV POINT SUR Cast: 32 Secchi Depth: --- Day of Year: 302

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.1 | 12 | 12.846 | 33.272 | 25.085 | 81 | --- | --- | --- | --- |
| 0 | 2.0 | 11 | 12.856 | 33.272 | 25.083 | 82 | --- | --- | --- | --- |
| 0 | 1.9 | 10 | 12.856 | 33.272 | 25.083 | 82 | --- | --- | --- | --- |
| 0 | 2.4 | 9 | 12.851 | 33.273 | 25.084 | 81 | 4.117 | 0.243 | 1.192 | 14.917 |
| 5 | 5.5 | 8 | 12.638 | 33.349 | 25.185 | 82 | 4.439 | 0.248 | 1.179 | 16.129 |
| 10 | 9.4 | 7 | 12.198 | 33.442 | 25.342 | 90 | 11.692 | 0.294 | 1.149 | 15.501 |
| 20 | 20.0 | 6 | 11.178 | 33.483 | 25.563 | 92 | 15.215 | 0.325 | 1.392 | 15.723 |
| 30 | 30.3 | 5 | 10.964 | 33.559 | 25.660 | 93 | 14.967 | 0.312 | 1.509 | 16.847 |
| 40 | 40.7 | 4 | 10.464 | 33.596 | 25.777 | 93 | 21.046 | 0.315 | 1.684 | 21.952 |
| 60 | 60.2 | 3 | 10.001 | 33.679 | 25.921 | 92 | 23.418 | 0.109 | 1.957 | 25.632 |
| 80 | 80.0 | 2 | 9.821 | 33.727 | 25.990 | 80 | 25.077 | 0.439 | 2.243 | 36.529 |
| 85 | 85.1 | 1 | 9.822 | 33.729 | 25.991 | 76 | 25.222 | 0.438 | 2.281 | 37.994 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 9 | 12.690 | 0.799 | 0 | 100 | 532.947 | 41.997 | 0 |
| 5 | 8 | 7.990 | 0.800 | 5 | 50 | 364.177 | 45.579 | 2 |
| 10 | 7 | 1.025 | 0.333 | 10 | 30 | 33.797 | 32.986 | 4 |
| 20 | 6 | 0.525 | 0.313 | 10 | 15 | 23.229 | 22.671 | 6 |
| 30 | 5 | 0.387 | 0.281 | 20 | 5 | 6.219 | 11.856 | 11 |
| 40 | 4 | 0.295 | 0.311 | 30 | 1 | 1.053 | 2.719 | 24 |
| 60 | 3 | 0.228 | 0.326 | 40 | 0.1 | 0.277 | 0.937 | 47 |
| 80 | 2 | 0.320 | 1.786 | | | | | |
| 85 | 1 | 0.282 | 1.667 | | | | | |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 40.09 | mg m-2 day -1 | Carbon Fixation: | 1400.3 | mg m-2 day-1 |
| Phaeophytin: | 8.79 | mg m-2 day -1 | Productivity Index: | 34.93 | mg C mg Chl day-1 |
| Mixed Layer | --- | meters | PBOpt: | 45.58 | mg C mg Chl day-1 |

Date: Oct 29, 2005 14:09 Cruise: S405 Latitude: 37.948 Year: 2005
 Project: CALCOFI Station: 60-50 Longitude: -122.882 Work week: 44
 Platform: RV POINT SUR Cast: 33 Secchi Depth: --- Day of Year: 302

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 2.0 | 12 | 12.593 | 33.226 | 25.098 | 83 | --- | --- | --- | --- |
| 0 | 1.9 | 11 | 12.595 | 33.226 | 25.098 | 83 | --- | --- | --- | --- |
| 0 | 2.0 | 10 | 12.596 | 33.224 | 25.097 | 83 | --- | --- | --- | --- |
| 0 | 1.9 | 9 | 12.597 | 33.222 | 25.095 | 83 | --- | --- | --- | --- |
| 0 | 2.0 | 8 | 12.597 | 33.222 | 25.094 | 83 | --- | --- | --- | --- |
| 0 | 2.1 | 7 | 12.599 | 33.222 | 25.094 | 82 | 4.542 | 0.291 | 1.048 | 19.849 |
| 5 | 5.0 | 6 | 12.601 | 33.224 | 25.096 | 82 | --- | --- | --- | --- |
| 10 | 9.9 | 5 | 12.516 | 33.341 | 25.203 | 86 | --- | --- | --- | --- |
| 20 | 20.5 | 4 | 12.334 | 33.444 | 25.318 | 89 | 6.439 | 0.250 | 0.949 | 15.775 |
| 30 | 29.8 | 3 | 11.089 | 33.590 | 25.663 | 92 | 20.604 | 0.453 | 2.083 | 27.301 |
| 40 | 40.8 | 2 | 10.106 | 33.639 | 25.872 | 73 | 23.653 | 0.493 | 2.331 | 34.206 |
| 45 | 45.9 | 1 | 10.101 | 33.640 | 25.874 | 63 | 23.677 | 0.511 | 2.448 | 34.425 |

Biological

| DEP (m) | BTL # | CHL (mg m-3 d-1) | PHAEO (mg m-3 d-1) | DEP (m) | % S. I. | CARBON (mg m-3 d-1) | PROD INDEX carbon/chl (mg m-3 d-1) | LIGHT DEPTH (m) |
|------------|----------|---------------------|-----------------------|------------|---------|------------------------|--|-----------------------|
| 0 | 7 | 8.460 | 0.504 | 0 | 100 | 306.512 | 36.231 | 0 |
| 5 | 6 | 4.268 | 0.458 | 5 | 50 | 134.132 | 31.430 | 3 |
| 10 | 5 | 2.416 | 0.421 | 10 | 30 | 62.011 | 25.669 | 4 |
| 20 | 4 | 1.523 | 0.340 | 10 | 15 | 57.736 | 23.899 | 7 |
| 30 | 3 | 0.583 | 0.871 | 20 | 5 | 15.657 | 10.281 | 13 |
| 40 | 2 | 0.526 | 1.606 | 30 | 1 | 1.372 | 2.354 | 23 |
| 45 | 1 | 0.620 | 1.912 | 45 | 0.1 | 0.483 | 0.778 | 38 |

Integrated Value

Integrated values are 1.0% of Surface Intensity (S.I.)

| | | | | | |
|------------------------|-------|---------------|---------------------|--------|-------------------|
| Chlorophyll <i>a</i> : | 50.97 | mg m-2 day -1 | Carbon Fixation: | 1174.3 | mg m-2 day-1 |
| Phaeophytin: | 11.30 | mg m-2 day -1 | Productivity Index: | 23.04 | mg C mg Chl day-1 |
| Mixed Layer | --- | meters | PBOpt: | 36.23 | mg C mg Chl day-1 |

Date: Oct 29, 2005 23:07 Cruise: S405 Latitude: 37.258 Year: 2005
 Project: CALCOFI Station: 63.5-52.5 Longitude: -122.629 Work week: 44
 Platform: RV POINT SUR Cast: 34 Secchi Depth: --- Day of Year: 302

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.8 | 12 | 12.996 | 33.377 | 25.137 | 77 | --- | --- | --- | --- |
| 0 | 1.7 | 11 | 13.045 | 33.375 | 25.125 | 76 | --- | --- | --- | --- |
| 0 | 1.5 | 10 | 13.051 | 33.375 | 25.124 | 76 | --- | --- | --- | --- |
| 0 | 1.7 | 9 | 12.963 | 33.379 | 25.145 | 78 | 2.906 | 0.244 | 1.085 | 14.248 |
| 5 | 4.8 | 8 | 12.735 | 33.382 | 25.192 | 84 | 4.137 | 0.246 | 0.897 | 13.106 |
| 10 | 9.5 | 7 | 12.648 | 33.387 | 25.213 | 86 | 5.400 | 0.258 | 0.814 | 13.888 |
| 20 | 19.1 | 6 | 12.508 | 33.397 | 25.248 | 89 | 8.099 | 0.284 | 0.944 | 14.982 |
| 30 | 30.0 | 5 | 11.321 | 33.524 | 25.569 | 92 | 14.066 | 0.337 | 1.455 | 19.313 |
| 40 | 40.2 | 4 | 11.058 | 33.547 | 25.634 | 92 | 17.355 | 0.339 | 1.597 | 22.449 |
| 60 | 59.5 | 3 | 10.239 | 33.658 | 25.865 | 92 | 21.454 | 0.230 | 2.125 | 24.411 |
| 80 | 80.7 | 2 | 9.821 | 33.748 | 26.006 | 83 | 25.743 | 0.291 | 2.253 | 30.988 |
| 90 | 91.6 | 1 | 9.804 | 33.754 | 26.014 | 76 | 25.543 | 0.264 | 2.390 | 31.263 |

Date: Oct 30, 2005 01:44 Cruise: S405 Latitude: 36.955 Year: 2005
 Project: CALCOFI Station: 65.5-52.5 Longitude: -122.415 Work week: 45
 Platform: RV POINT SUR Cast: 35 Secchi Depth: --- Day of Year: 303

* Note: Latitude and Longitude are reported in decimal degrees. '---' signifies no data.

Physical and Chemical

| DEP (m) | PRESS (db) | BTL # | TEMP (°C) | SAL | SIGMA T | TRANSMISS (%) | NO3 (μM) | NO2 (μM) | PO4 (μM) | SIO4 (μM) |
|------------|---------------|----------|--------------|--------|------------|------------------|-------------|-------------|-------------|--------------|
| 0 | 1.3 | 12 | 13.151 | 33.362 | 25.094 | 82 | 0.900 | 0.111 | 0.723 | 9.300 |
| 5 | 5.4 | 11 | 13.120 | 33.362 | 25.101 | 82 | 2.377 | 0.174 | 0.709 | 9.270 |
| 10 | 10.8 | 10 | 11.980 | 33.449 | 25.389 | 92 | 8.063 | 0.275 | 0.825 | 11.996 |
| 20 | 19.8 | 9 | 11.298 | 33.507 | 25.560 | 92 | 12.804 | 0.308 | 1.282 | 14.357 |
| 30 | 30.7 | 8 | 10.832 | 33.505 | 25.642 | 93 | 18.046 | 0.374 | 1.607 | 17.115 |
| 40 | 41.4 | 7 | 10.070 | 33.545 | 25.805 | 93 | 21.660 | 0.145 | 1.753 | 20.358 |
| 60 | 60.3 | 6 | 9.911 | 33.737 | 25.982 | 90 | 23.509 | 0.092 | 2.005 | 25.183 |
| 80 | 80.8 | 5 | 9.892 | 33.755 | 25.999 | 90 | 24.605 | 0.098 | 2.061 | 26.622 |
| 100 | 99.5 | 4 | 9.863 | 33.778 | 26.023 | 90 | 24.524 | 0.108 | 2.046 | 26.808 |
| 150 | 152.4 | 3 | 9.714 | 33.868 | 26.119 | 92 | 26.050 | 0.077 | 2.160 | 28.834 |
| 200 | 201.4 | 2 | 9.194 | 33.939 | 26.260 | 92 | 27.721 | 0.102 | 2.380 | 32.687 |
| 270 | 273.0 | 1 | 8.367 | 34.086 | 26.505 | 92 | 29.280 | 0.086 | 2.416 | 38.925 |

Table 4: *Zooplankton Data.* This table lists the total biovolume and krill abundance measured at the nineteen hydrographic stations—10 on CalCOFI line 67, 9 on CalCOFI line 60— where bongo net tows were completed during the PaCOOS cruise of October 2005. The data are listed by CalCOFI line, onshore to offshore and south to north.

| Station (<i>CalCOFI</i>) Number | Latitude (°N) | Longitude (°W) | Zooplankton Biovolume (ml/1000m ³) | Krill Abundance (no./1000m ³) |
|---|------------------|-------------------|--|---|
| 1 (<i>CI</i>) | 36.794 | 121.847 | 174 | 574 |
| 2 (<i>MI</i>) | 36.742 | 122.032 | 71 | 2544 |
| 4 (<i>67-55</i>) | 36.631 | 122.410 | 280 | 4247 |
| 6 (<i>67-60</i>) | 36.449 | 122.777 | 710 | 551 |
| 8 (<i>67-65</i>) | 36.290 | 123.133 | 347 | 4105 |
| 10 (<i>67-70</i>) | 36.127 | 123.474 | 199 | 3181 |
| 12 (<i>67-75</i>) | 35.963 | 123.863 | 125 | 547 |
| 14 (<i>67-80</i>) | 35.797 | 124.215 | 116 | 486 |
| 16 (<i>67-85</i>) | 35.631 | 124.556 | 773 | 950 |
| 18 (<i>67-90</i>) | 35.454 | 124.932 | 171 | 1652 |
| 31 (<i>60-55</i>) | 37.789 | 123.267 | 147 | 3653 |
| 30 (<i>60-57.5</i>) | 37.710 | 123.456 | 495 | 2490 |
| 29 (<i>60-60</i>) | 37.619 | 123.626 | 198 | 1151 |
| 28 (<i>60-65</i>) | 37.443 | 123.991 | 209 | 1314 |
| 27 (<i>60-70</i>) | 37.282 | 124.348 | 183 | 186 |
| 26 (<i>60-75</i>) | 37.121 | 124.700 | 710 | 106 |
| 25 (<i>60-80</i>) | 36.958 | 125.057 | 237 | 349 |
| 24 (<i>60-85</i>) | 36.811 | 125.439 | 275 | 892 |
| 23 (<i>60-90</i>) | 36.605 | 125.743 | 423 | 31941 |

Table 5: *Marine Mammal Observations.* This table lists the results of the marine mammal observations made during the PaCOOS cruise of October 2005. The data are listed by species code, then chronologically within each species code.

| Species Code | Scientific (<i>Common</i>) Name | Size of Group | Date of Sighting (mm/dd/yyyy) | Latitude (°N) | Longitude (°W) |
|--------------|--|---------------|----------------------------------|------------------|-------------------|
| 16 | Delphinus capensis <i>(long-beaked common dolphin)</i> | 150 | 10/26/2005 | 35.840 | 124.106 |
| | | 200 | | 35.840 | 124.106 |
| | | 150 | | 35.840 | 124.106 |
| | | 40 | 10/28/2005 | 37.080 | 124.781 |
| 21 | Grampus griseus <i>(risso's dolphin)</i> | 6 | 10/25/2005 | 36.735 | 121.973 |
| 22 | Lagenorhynchus obliquidens <i>(pacific white- sided dolphin)</i> | 25 | 10/29/2005 | 37.689 | 123.109 |
| | | 150 | | 37.455 | 122.993 |
| 27 | Lissodelphis borealis <i>(northern right whale dolphin)</i> | 8 | 10/29/2005 | 37.689 | 123.109 |
| 44 | Phocoenoides dalli <i>(dall's porpoise)</i> | 3 | 10/29/2005 | 37.300 | 122.733 |
| | | 3 | | 37.265 | 122.647 |
| | | 5 | | 37.232 | 122.613 |
| | | 2 | | 37.011 | 122.454 |
| 74 | Balaenoptera physalus <i>(fin whale)</i> | 1 | 10/26/2005 | 35.872 | 124.035 |
| | | 6 | | 35.720 | 124.360 |
| | | 1 | 10/27/2005 | 35.506 | 124.933 |
| | | 1 | | 35.740 | 125.107 |
| | | 1 | | 35.742 | 125.109 |
| | | 2 | | 36.473 | 125.325 |
| | | 2 | 10/28/2005 | 36.568 | 125.031 |
| | | 3 | | 36.986 | 125.015 |
| | | 2 | | 36.990 | 125.004 |
| | | 1 | | 37.009 | 124.956 |
| | | 2 | | 37.036 | 124.893 |
| | | 2 | 10/29/2005 | 37.677 | 123.142 |

| Species Code | Scientific (<i>Common</i>) Name | Size of Group | Date of Sighting (mm/dd/yyyy) | Latitude (°N) | Longitude (°W) |
|--------------|---|---------------|----------------------------------|------------------|-------------------|
| 75 | Balaenoptera musculus (<i>blue whale</i>) | 1 | 10/26/2005 | 36.021 | 123.733 |
| | | 1 | | 36.012 | 123.750 |
| | | 1 | | 35.840 | 124.106 |
| | | 1 | | 35.840 | 124.106 |
| | | 1 | | 35.840 | 124.106 |
| | | 1 | | 35.840 | 124.106 |
| | | 2 | | 35.840 | 124.106 |
| | | 2 | | 35.840 | 124.106 |
| | | 1 | | 35.840 | 124.106 |
| | | 2 | | 35.840 | 124.106 |
| | | 1 | | 35.718 | 124.364 |

| Species Code | Scientific (<i>Common</i>) Name | Size of Group | Date of Sighting (mm/dd/yyyy) | Latitude (°N) | Longitude (°W) |
|--------------|--|---------------|----------------------------------|------------------|-------------------|
| 76 | Megaptera novaeangliae (<i>humpback whale</i>) | 1 | 10/25/2005 | 36.757 | 121.866 |
| | | 2 | | 36.727 | 121.971 |
| | | 1 | | 36.731 | 121.949 |
| | | 2 | | 36.710 | 122.045 |
| | | 3 | | 36.718 | 122.003 |
| | | 4 | | 36.679 | 122.043 |
| | | 1 | | 36.686 | 122.094 |
| | | 2 | | 36.714 | 122.164 |
| | | 1 | 10/26/2005 | 36.740 | 122.206 |
| | | 1 | | 36.691 | 122.419 |
| | | 1 | | 36.630 | 122.397 |
| | | 1 | | 36.048 | 123.674 |
| | | 1 | | 36.048 | 123.681 |
| | | 2 | | 35.993 | 123.785 |
| | | 1 | | 35.991 | 123.788 |
| | | 4 | 10/29/2005 | 37.703 | 123.097 |
| | | 2 | | 37.666 | 123.125 |
| | | 4 | | 37.670 | 123.131 |
| | | 1 | | 37.345 | 122.836 |
| | | 1 | | 37.273 | 122.666 |
| | | 1 | | 37.260 | 122.634 |
| | | 1 | | 37.259 | 122.630 |
| | | 1 | | 37.187 | 122.582 |
| | | 2 | | 37.165 | 122.567 |
| | | 2 | | 37.106 | 122.524 |
| | | 4 | | 37.098 | 122.518 |
| | | 4 | | 37.097 | 122.517 |
| | | 2 | | 37.094 | 122.514 |
| | | 2 | | 37.090 | 122.511 |
| | | 2 | | 37.076 | 122.500 |
| | | 3 | | 37.071 | 122.496 |
| | | 2 | | 37.055 | 122.486 |
| | | 3 | | 37.050 | 122.482 |
| | | 1 | | 37.039 | 122.474 |
| | | 2 | | 36.989 | 122.438 |
| | | 2 | | 36.979 | 122.430 |
| | | 2 | | 36.976 | 122.429 |
| | | 2 | | 36.974 | 122.427 |
| | | 1 | | 36.963 | 122.419 |

| Species Code | Scientific (<i>Common</i>) Name | Size of Group | Date of Sighting (mm/dd/yyyy) | Latitude (°N) | Longitude (°W) |
|--------------|---|---------------|----------------------------------|------------------|-------------------|
| 79 | Unidentified large whale | 1 | 10/26/2005 | 35.961 | 123.901 |
| | | 1 | 10/27/2005 | 35.703 | 125.088 |
| | | 1 | | 36.002 | 125.311 |
| | | 1 | | 36.083 | 125.377 |
| | | 1 | 10/28/2005 | 37.069 | 124.910 |
| | | 1 | | 37.076 | 124.793 |
| | | 1 | | 37.122 | 124.701 |
| | | 2 | 10/29/2005 | 37.672 | 123.134 |
| | | 1 | | 37.349 | 122.845 |
| | | 1 | | 37.255 | 122.630 |
| | | 1 | | 37.240 | 122.618 |
| | | 1 | | 37.233 | 122.614 |
| | | 1 | | 37.206 | 122.596 |
| | | 1 | | 36.967 | 122.421 |

Figures

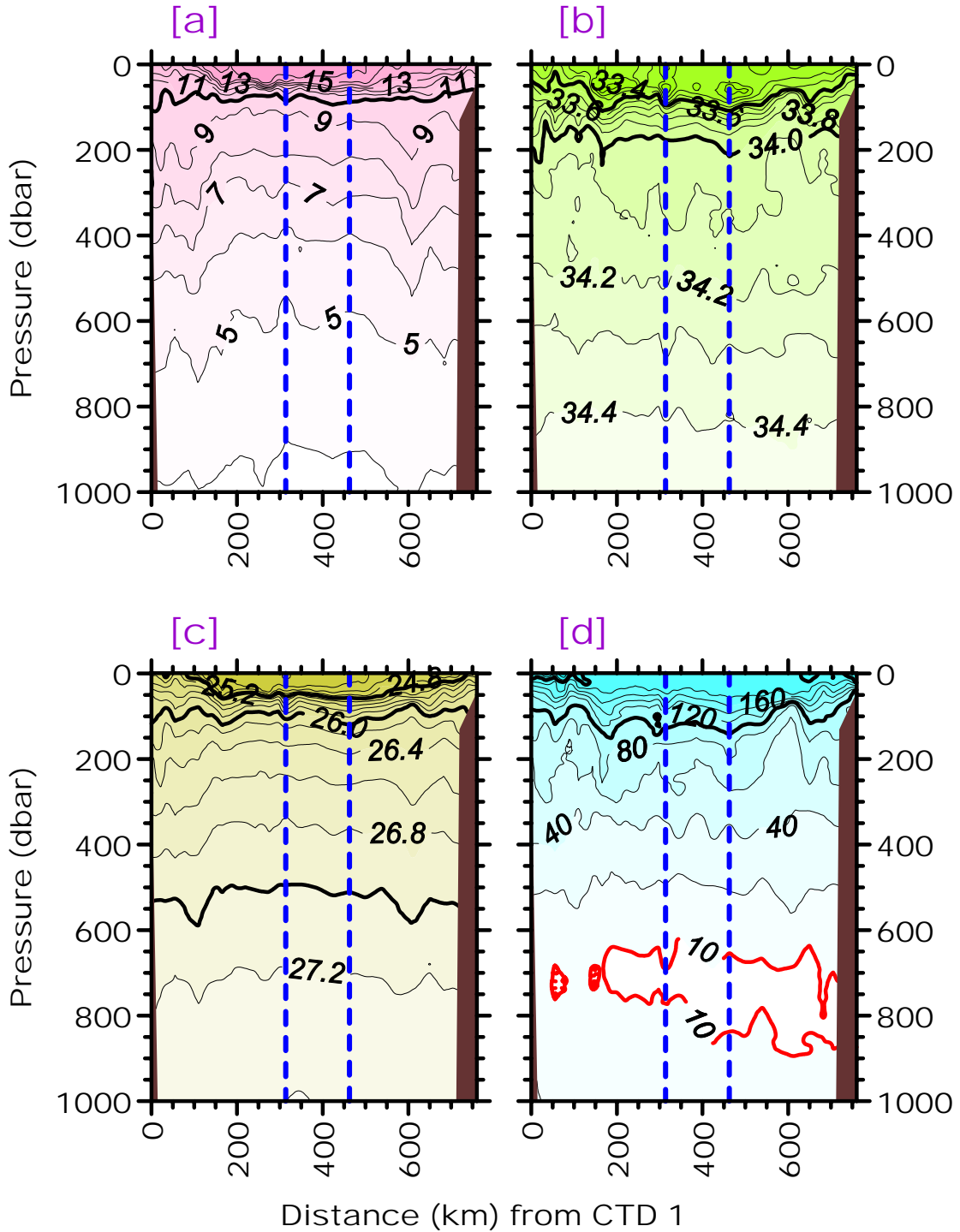


Figure 3: Contours of (a) temperature (°C), (b) salinity, (c) density anomaly (kg m⁻³), and (d) oxygen (μm kg⁻¹) fields along the line of hydrographic stations from Moss Landing (on the left) to Point Reyes. The dashed blue lines indicate the locations of the corner hydrographic stations (CTDs 18/19 and 23). Contour intervals for panels a-d are 1°C, 0.1, 0.2 kg m⁻³, and 20 μm kg⁻¹, respectively, except that the (nearly) oxygen minimum contour of 10 μm kg⁻¹ is highlighted in red in panel d.

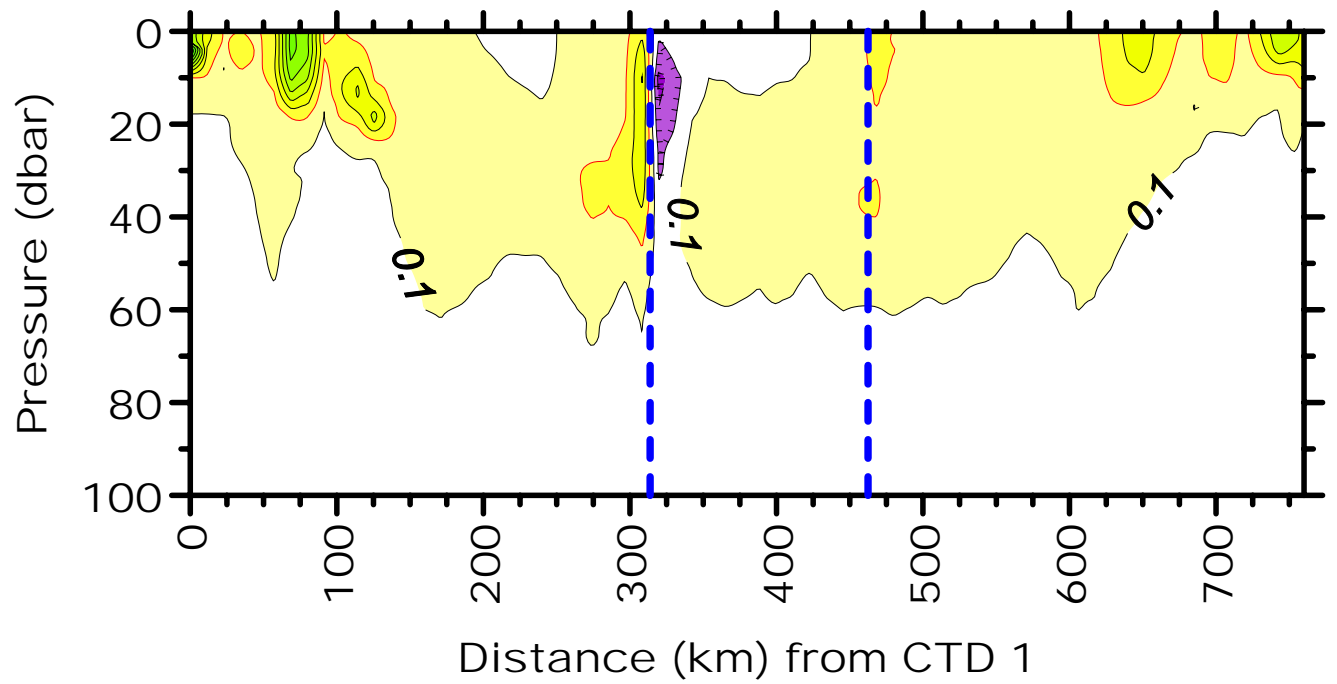


Figure 4: Contours of fluorescence (volts) in the upper 100 dbars of the water column along the line of hydrographic stations from Moss Landing (on the left) to Point Reyes. The dashed blue lines indicate the locations of the corner hydrographic stations (CTDs 18/19 and 23). The contour interval is 0.1 volt, ranging from green (highest) to purple (lowest). The 0.2-volt contour has been highlighted in red.

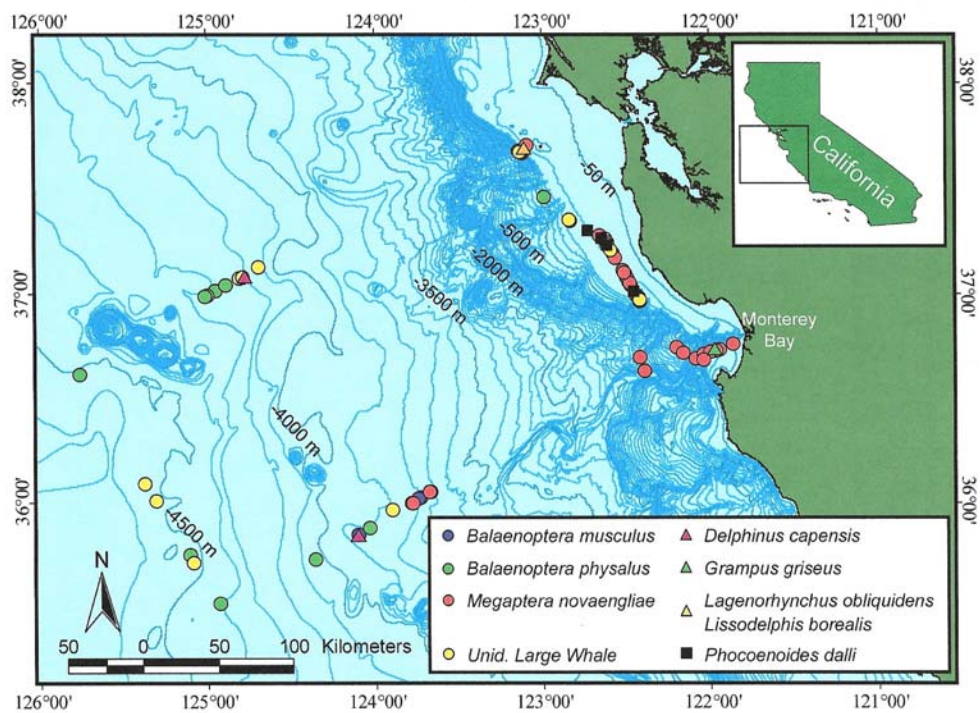


Figure 5: Locations of sightings of all marine mammals during the PaCOOS cruise of October 2005.

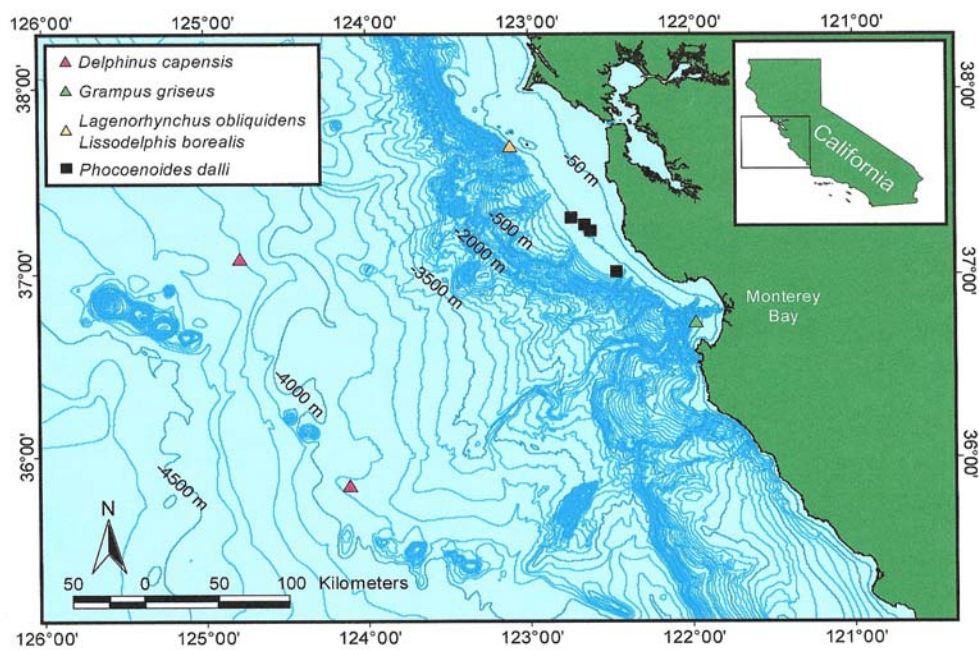


Figure 6: Locations of sightings of small marine mammals during the PaCOOS cruise of October 2005. (No large whale sightings are posted on this chart.)

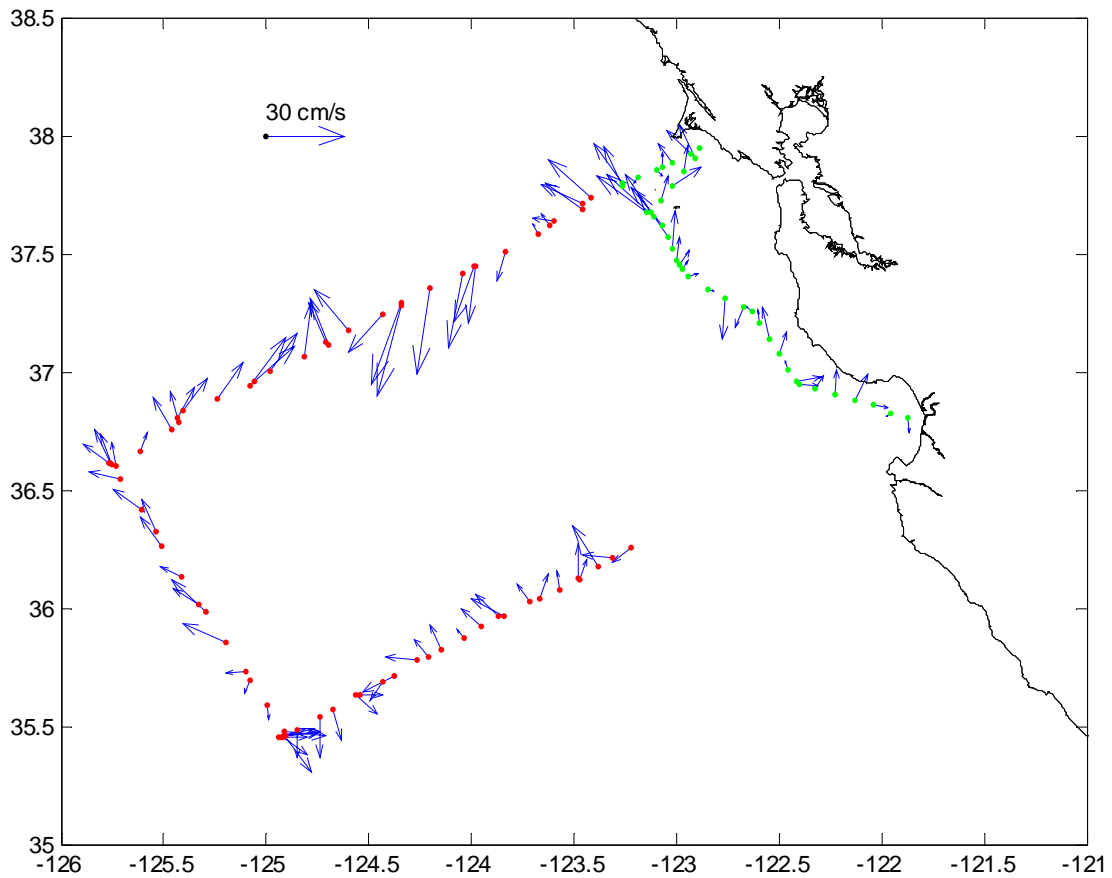


Figure 7: Ocean current velocity vectors measured by the ADCP along the track of the ship during the PaCOOS cruise of October 2005. Red dots indicate measurements by the 75 kHz Ocean Surveyor instrument, while green dots indicate measurements by the 300 kHz Broadband instrument. Each vector represents a 1-hr. average for 50-100 meters (Ocean Surveyor) or 25-50 meters (Broadband) in the water column. Because of difficulties with the input of navigation data to the Ocean Surveyor, there are no data available for the first day of the cruise.

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